

*Final*

# ENVIRONMENTAL ASSESSMENT

## MILITARY HOUSING PRIVATIZATION Barksdale Air Force Base, Louisiana



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**January 2006**

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## **FINDING OF NO SIGNIFICANT IMPACT (FONSI)**

### **1.0 BARKSDALE AIR FORCE BASE MILITARY HOUSING PRIVATIZATION INITIATIVE**

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Barksdale Air Force Base (BAFB), is proposing to privatize all military housing currently located on the base. This includes Main Base Housing, Capehart, and Heritage Heights as well as the proposed new housing areas--New Heritage Heights (the undeveloped parcel south of Heritage Heights) and the Horse Stable area. The purpose of this project is to provide safe, quality, affordable housing for eligible military members and their dependents stationed at BAFB and detached units within the BAFB commuting distance. Two hundred Capehart units must be replaced to meet current life safety codes and to provide a comfortable and appealing living environment comparable to the off-base civilian community. In addition, 361 new units must be constructed to meet BAFB housing requirements.

### **2.0 DESCRIPTION OF THE PROPOSED ACTIONS AND ALTERNATIVES**

---

The proposed Action at BAFB is to convey 729 existing housing units on the Main Base and the East Reservation, demolish 200 of the conveyed units in the Capehart Housing Neighborhood, and construct a combination of 561 new single-family and multi-family housing units (200 units to replace the demolished Capehart Units and 361 new units to meet the housing deficit) for the Housing Privatization Initiative. Included in the existing inventory of 729 units, are 229 housing units on the Main Base that are listed on the historical register. These units will also be conveyed in the privatization initiative. The successful developer who is awarded the privatization project for BAFB will be responsible for construction of new units, renovation of existing units to include the historical units (following SHPO guidelines), and maintaining the total end-state housing inventory and associated community and infrastructure features for a 50-year period. The land on which the housing units and associated features are built will be leased to the successful developer for the duration of the 50 year period. The Proposed Action also includes the demolition of the Capehart housing area. Following demolition, the area will be returned to natural conditions, allowing native vegetation to return to the site. Housing located on the Main Base and Heritage Heights will be renovated to varying degrees. Residential housing will be constructed on the New Heritage Heights and the Horse Stable area. All of the housing units will be placed under the management and operation of a private company and none of the existing housing will be retained by the government.

Alternative 1 will probably not occur because Congress has extended the privatization legislation. In this alternative, the housing units will be retained by the government and renovations, demolitions, and replacements will be accomplished by the Air Force. Thus, the government retains the housing units and responsibility. Subsequently, the Air Force will execute an improvement/replacement project consisting of 200 units in accordance with the installations HCP and at the program amount requested by this privatization candidate. As with the Proposed Action, Capehart housing will be demolished and the area will be returned to natural conditions. Additionally, Main Base and Heritage Heights housing will be renovated to varying degrees and the New Heritage Heights and Horse Stable area will be constructed. All units, both existing and newly constructed, will be placed under the management and operation of the Air Force.

The No Action Alternative is to continue housing operations as status quo. No renovation of current housing units or construction of new housing units will take place. Capehart will remain in place and will not be demolished.

### **3.0 ENVIRONMENTAL CONSEQUENCES**

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This environmental assessment concludes that the proposed Action will not significantly impact the environment. Minor impacts to the environment include the following:

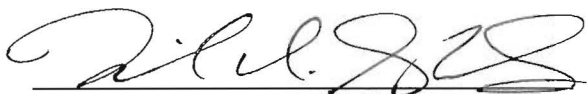
- Overall improvement to the safety and appearance of base housing.
- Slight changes in the topography caused by excavation in the new housing areas.
- Temporary increase in erosion and soil loss caused by new construction.
- Temporary increase in the sediment load of storm-water in runoff from construction sites.
- Slight degradation in the quality and increase in the volume of surface waters originating in the new housing areas compared to the present levels due to roads and other impermeable surfaces.
- Loss of 0.0243% of the farmland in Bossier Parish.
- Changes in the land use from pasture and forestry to residential housing.
- Some displacement of wildlife and loss of natural vegetation from the new housing areas that will be partially off-set by the restoration of natural conditions after Capehart is demolished.

Overall, Alternative 1 and the Proposed Action will positively impact activities at BAFB. The Proposed Action will allow for a more efficient and cost effective method of operating and maintaining housing at BAFB.

### **4.0 CONCLUSION**

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The Proposed Action does not represent a major federal action with significant impacts to the human or natural environment; therefore, an Environmental Impact Statement (EIS) is not required. A Finding Of No Significant Impact (FONSI) is thus warranted.



MICHAEL R. SHOULTS, Colonel, USAF  
ESOHC Chairman

10 July 2006  
Date

**Final**

**Environmental Assessment of  
Military Housing Privatization  
Barksdale Air Force Base, Louisiana**

**Prepared For**

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**January 2006**

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## LIST OF ACRONYMS AND ABBREVIATIONS

ACC	Air Combat Command
ACHP	Advisory Council on Historical Preservation
ACM	Asbestos Containing Material
ADA	Americans with Disabilities Act
AEP	American Electric Power
AFFF	Aqueous Film Forming Foam
AFI	Air Force Instruction
AIRFA	American Indian Religious Freedom Act
ARPA	Archaeological and Historic Preservation Act
BAFB	Barksdale Air Force Base
BLM	Bureau of Land Management
BMP	Best Management Practice
BNR	Barksdale Natural Resources
BX	Base Exchange
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CFR	Code of Federal Regulations
CO	Carbon monoxide
CRM	Cultural Resource Management
CRMP	Cultural Resources Management Plan
CWA	Clean Water Act
DEQ	Department of Environmental Quality
DOD	Department of Defense
DOI	U.S. Department of the Interior
DRMO	Defense Reutilization and Management Office
EA	Environmental Assessment
EBS	Environmental Baseline Survey
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ERP	Environmental Restoration Program
FLPMA	Federal Land Policy and Management Act
FONPA	Finding Of No Particular Alternative
FONSI	Finding Of No Significant Impact
FWPCA	Federal Water Pollution Control Act
FY	Fiscal Year
GFCI	Ground Fault Circuit Interrupter
GPM	Gallons per minute
HCP	Housing Community Plan

HQ	Head Quarters
INRMP	Integrated Natural Resources Management Plan
IPM	Integrated Pest Management
LDAF	Louisiana Department of Agriculture and Forestry
LDEQ	Louisiana Department of Environmental Quality
LDWF	Louisiana Department of Wildlife and Fisheries
LPDES	Louisiana Pollutant Discharge Elimination System
MFH	Military Family Housing
MGD	Million Gallons per Day
MOA	Memorandum of Agreement
MMRP	Military Munitions Response Program
MSA	Metropolitan Statistical Area
MSL	Mean Sea Level
NA	Natural Areas
NAAQS	National Ambient Air Quality Standards
NAF	non-appropriated funds
NAGPRA	Native American Graves Protection and Repatriation Act
NCA	Noise Control Act
NCO	Non Commanding Officer
NCP	National Contingency Plan
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NPS	Non Point Source
NRCS	National Resource Conservation Service
NRHP	National Registry of Historic Places
NO <sub>2</sub>	Nitrogen Dioxide
NRPA	National Register of Historical Places
O <sub>3</sub>	Ozone
Pb	Lead
PCB	Poly Chlorinated Biphenyls
PCi/L	Pico Curies per Liter
PL	Public Law
PM <sub>10</sub>	Particulate Matter less than 10 microns in diameter
POL	Petroleum Oil and Lubricants
PVC	Polyvinyl Chloride
RCRA	Resource Conservation and Recovery Act
SDWA	Safe Drinking Water Act
SHPO	State Historical Preservation Officer
SO <sub>2</sub>	Sulfur Dioxide
SWEPCO	Southwestern Electric Power Company
SWMU	Solid Waste Management Unit
TSCA	Toxic Substances Control Act

USAF	United States Air Force
USC	United States Code
USACE	United States Army Corps Of Engineers
U.S.	United States
USDA	U.S. Department of Agriculture
USFS	USDA Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UXO	Unexploded Ordnance
WSA	Weapon Storage Area
°F	Degrees Fahrenheit

## **FINDING OF NO SIGNIFICANT IMPACT (FONSI)**

### **1.0 BARKSDALE AIR FORCE BASE MILITARY HOUSING PRIVATIZATION INITIATIVE**

---

Barksdale Air Force Base (BAFB), is proposing to privatize all military housing currently located on the base. This includes Main Base Housing, Capehart, and Heritage Heights as well as the proposed new housing areas--New Heritage Heights (the undeveloped parcel south of Heritage Heights) and the Horse Stable area. The purpose of this project is to provide safe, quality, affordable housing for eligible military members and their dependents stationed at BAFB and detached units within the BAFB commuting distance. Two hundred Capehart units must be replaced to meet current life safety codes and to provide a comfortable and appealing living environment comparable to the off-base civilian community. In addition, 361 new units must be constructed to meet BAFB housing requirements.

### **2.0 DESCRIPTION OF THE PROPOSED ACTIONS AND ALTERNATIVES**

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The proposed Action at BAFB is to convey 729 existing housing units on the Main Base and the East Reservation, demolish 200 of the conveyed units in the Capehart Housing Neighborhood, and construct a combination of 561 new single-family and multi-family housing units (200 units to replace the demolished Capehart Units and 361 new units to meet the housing deficit) for the Housing Privatization Initiative. Included in the existing inventory of 729 units, are 229 housing units on the Main Base that are listed on the historical register. These units will also be conveyed in the privatization initiative. The successful developer who is awarded the privatization project for BAFB will be responsible for construction of new units, renovation of existing units to include the historical units (following SHPO guidelines), and maintaining the total end-state housing inventory and associated community and infrastructure features for a 50-year period. The land on which the housing units and associated features are built will be leased to the successful developer for the duration of the 50 year period. The Proposed Action also includes the demolition of the Capehart housing area. Following demolition, the area will be returned to natural conditions, allowing native vegetation to return to the site. Housing located on the Main Base and Heritage Heights will be renovated to varying degrees. Residential housing will be constructed on the New Heritage Heights and the Horse Stable area. All of the housing units will be placed under the management and operation of a private company and none of the existing housing will be retained by the government.

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The No Action Alternative is to continue housing operations as status quo. No renovation of current housing units or construction of new housing units will take place. Capehart will remain in place and will not be demolished.

### **3.0 ENVIRONMENTAL CONSEQUENCES**

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This environmental assessment concludes that the proposed Action will not significantly impact the environment. Minor impacts to the environment include the following:

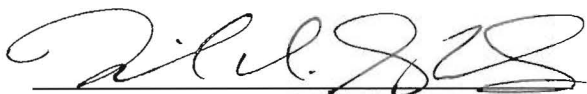
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- Changes in the land use from pasture and forestry to residential housing.
- Some displacement of wildlife and loss of natural vegetation from the new housing areas that will be partially off-set by the restoration of natural conditions after Capehart is demolished.

Overall, Alternative 1 and the Proposed Action will positively impact activities at BAFB. The Proposed Action will allow for a more efficient and cost effective method of operating and maintaining housing at BAFB.

### **4.0 CONCLUSION**

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The Proposed Action does not represent a major federal action with significant impacts to the human or natural environment; therefore, an Environmental Impact Statement (EIS) is not required. A Finding Of No Significant Impact (FONSI) is thus warranted.



MICHAEL R. SHOULTS, Colonel, USAF  
ESOHC Chairman

10 July 2006  
Date

# **FINAL ENVIRONMENTAL ASSESSMENT OF MILITARY HOUSING PRIVATIZATION BARKSDALE AIR FORCE BASE, LOUISIANA**

## **PURPOSE AND NEED FOR THE PROPOSED ACTION**

### **1.1 Background**

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Barksdale Air Force Base (BAFB) provides 729 housing units for those personnel who are authorized government family quarters. Of these 729 units, 594 units are designated for noncommissioned officers and the remaining 135 units for officers. Of the total, 401 units are located on the Main Base and 328 units are located on East Reservation.

Houses on the Main Base were originally built in 1932 and 1959, and the style has been preserved in 172 new houses completed in 1999. The large, two-story units on the Main Base depict French colonial settings. These homes were placed on the National Registry of Historic Places (NRHP) in April 1992 along with more than 200 buildings on the Main Base that now comprise the Barksdale Historic District. All of the units on the East Reservation are eight miles from the Main Base. All ranks are eligible to live in military family housing. Two hundred housing units were constructed in the 1960's under the Capehart Act, 229 historic units were constructed in the 1930's, and 300 units were constructed between 1994 and 1998.

### **1.2 Description and Purpose of the Proposed Action**

---

The Proposed Action is to convey all existing housing units on BAFB, to include Main Base Housing and the East Reservation Housing. The 200 housing units known as Capehart Housing will be demolished and new replacement units will be constructed in other areas in association with construction of new housing units to fulfill a housing deficit requirement. A total of 561 new units will be constructed in the East Reservation Housing area.

The purpose of this project is to provide modern, efficient housing for military members and their dependents stationed at BAFB. Two hundred Capehart units must be replaced to meet current life safety codes and to provide a comfortable and appealing living environment comparable to the off-base civilian community. In addition, 361 new units must be constructed to meet BAFB's current housing requirement. After completion, all units will meet "whole house standards" as programmed in accordance with the BAFB Housing Community Plan (HCP)

### **1.3 Need For The Proposed Action**

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The 2003 Housing Requirements and Marketing Analysis identifies a deficit of 361 housing units for BAFB. The existing 200 Capehart units require replacement due to deterioration resulting from age and heavy use. The cost to make required repairs would exceed more than 70percent of their replacement value. Few units have had major upgrades since construction, and they do not meet the needs of today's families, nor do they provide a modern home environment. Kitchen and bathroom cabinets and fixtures are obsolete and deteriorated. Counter tops are warped, stained, and separating at the seams. Plumbing and lighting fixtures are deteriorated and dated. The electrical systems do not meet modern construction codes. Ground Fault

Circuit Interrupter (GFCI) protection is not provided for bathrooms, kitchens, and exterior circuits. Flooring is stained, loose, and mismatched due to non-availability of original materials for replacement. Windows, siding, and insulation also require replacement. The units have inadequate living and storage. Pavement areas need renovation.

Without the Proposed Action, existing units will continue to deteriorate rapidly, resulting in increased operations, maintenance, and repair costs to the government as well as inconvenience to the residents. Repairs will continue to be carried out in a costly, piecemeal fashion with little or no improvement in living quality. The impact will be morale decline for those families living in substandard military family housing units and/or unacceptable financial hardships for military families on limited budgets who are forced to live in higher-rent units off-base.

According to the General Plan for BAFB (BAFB, 2002), life cycle costs for privatization is less than that for continued government ownership. Additionally, the leverage has been determined to be greater than 3:1. The General Plan recommends that BAFB privatize housing on the Main Base and on the East Reservation.

#### 1.4 Regulatory Requirements

This Environmental Assessment (EA) is prepared in compliance with the *National Environmental Policy Act* (NEPA)(Public Law [PL] 91-190, 1969, as amended), the Council on Environmental Quality (CEQ) *Regulations for Implementing the Procedural Provisions of NEPA* (40 Code of Federal Regulations [CFR] 1500-1508, 1993), and Air Force Instruction (AFI) 32-7061, the *Environmental Impact Analysis Process*. The NEPA (PL 91-190, 1969) requires federal agencies to consider environmental consequences of all Proposed Actions in their decision-making process. The intent of NEPA is to protect, restore, or enhance the environment through a well-informed decision-making process. The CEQ was established under the NEPA to implement and oversee federal policy in this process. To this end, the CEQ issued the *Regulations for Implementing the Procedural Provisions of NEPA* (40 CFR 1500-1508, 1993). AFI 32-7061 implements the CEQ regulations within the United States Air Force (USAF).

The NEPA process is intended to assist the decision makers in understanding the environmental consequences of their actions and in taking appropriate measures that protect, restore, and enhance the environment. Other federal statutes that may apply to the Proposed Action are listed in Table 1-1.

**Table 1-1: Other Major Federal Environmental Statutes, Regulations, and Executive Orders Applicable to Federal Projects**

Environmental Resource	Statutes
Air	<i>Clean Air Act</i> (CAA) of 1970 (PL 91-604), as amended in 1977 and 1990 (PL 95-604); U.S. Environmental Protection Agency (EPA), Subchapter C-Air Programs (40 CFR 52-99)
Noise	<i>Noise Control Act</i> of 1972 (PL 92-574) and Amendments of 1978 (PL 95-609); EPA, Subchapter G-Noise Abatement Programs (40 CFT 201-211)
Water	<i>Federal Water Pollution Control Act</i> (FWPCA) of 1972 (PL 92-500) and Amendments; <i>Clean Water Act</i> (CWA) of 1977 (PL 95-217); EPA, Subchapter D-Water Programs (40 CFR 100-149); <i>Water Quality Act</i> of 1987 (PL 100-4);

Environmental Resource	Statutes
	EPA, Subchapter N-Effluent Guidelines and Standards (40 CFR 401-471); <i>Safe Drinking Water Act</i> (SDWA) of 1972 (PL 95-523) and Amendments of 1986 (PL 99-339); EPA, National Drinking Water Regulations and Underground Injection Control Program (40 CFR 141-149)
Land	<i>Federal Land Policy and Management Act</i> (FLPMA) of 1976 (PL 94-579); <i>Military Lands Withdrawal Act</i> (PL 99-606); Land Withdrawal Regulations (43 CFR 2300); <i>Southern Nevada Public Land Management Act of 1988</i> (PL 105-263)
Biological Resources	<i>Migratory Bird Treaty Act of 1918</i> ; <i>Fish and Wildlife Coordination Act of 1958</i> (PL 85-654); Sikes Act of 1960 (PL 86-97) and Amendments of 1986 (PL 99-561) and 1997 (PL 105-85 Title XXIX); <i>Endangered Species Act of 1973</i> (PL 93-205) and Amendments of 1988 (PL 100-478); <i>Fish and Wildlife Conservation Act of 1980</i> (PL 96-366); <i>Lacey Act Amendments of 1981</i> (PL 97-79)
Wetlands and Floodplains	Section 401 and 404 of the <i>Federal Water Pollution Control Act of 1972</i> (PL 92-500); EPA, subchapter D-Water Programs 40 CFR 100-149 (105 ref); Floodplain Management –1977 (Executive Order [EO] 11988); Protection of Wetlands-1977 (EO 11990); <i>Emergency Wetlands Resources Act of 1986</i> (PL 99-645); <i>North American Wetlands Conservation Act of 1989</i> (PL 101-233)
Cultural Resources	National Historic Preservation Act (NHPA) of 1966 ( <i>16 United States Code [USC] 470 et seq.</i> ) (PL 89-665) and Amendments of 1980 (PL 96-515) and 1992 (PL 102-575); Protection and Enhancement of the Cultural Environment-1971 (EO 11593); Indian Sacred Sites-1966 (EO 13007); <i>American Indian Religious Freedom Act</i> (AIRFA) of 1978 (PL 95-341); <i>Antiquities Act of 1906</i> ; <i>Archaeological Resources Protection Act</i> (ARPA) of 1979 (PL 96-95); <i>Native American Graves Protection and Repatriation Act</i> (NAGPRA) of 1990 (PL 101-601)
Solid/Hazardous Materials and Waste	<i>Resource Conservation and Recovery Act</i> (RCRA) of 1976 (PL 94-5800), as Amended by (PL 100-582); EPA, Subchapter I-Solid Wastes (40 CFR 240-280); <i>Comprehensive Environmental Response, Compensation, and Liability Act</i> (CERCLA) of 1980 (42 USC 9601) (PL 96-510); <i>Toxic Substances Control Act</i> (PL 94-496), EPA, Subchapter R-Toxic Substances Control Act (40 CFR 702-799); <i>Federal Insecticide, Fungicide, and Rodenticide Control Act</i> (40 CFR 162-180); <i>Emergency Planning and Community Right-to-Know Act</i> (40 CFR 300-399)
Environmental Justice	Federal Action to Address Environmental Justice in Minority Populations and Low-Income Populations (EO 12898); Protection of Children from Environmental Health Risks and Safety risks (EO 13045)

## **DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES**

### **2.1 Proposed Action**

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The Proposed Action is to convey all existing housing units on BAFB, to include the Main Base Housing and the East Reservation Housing, demolish 200 Capehart Housing Units, and construct 561 new housing units in a mixture of single-family and multiplex family housing units for privatization to acquire a total BAFB end state requirement of 1090 housing units. Following demolition of the Capehart housing units, the Capehart housing area will be returned to natural conditions, allowing native vegetation to return to the site. Housing located on the Main Base and Heritage Heights will be renovated to varying degrees to achieve “whole house” standards and make the units privatizable. The phrase “make the units privatizable” means that each existing housing unit will, at a minimum if no other work is required to achieve “whole house” standards, must have individual utility meters installed for gas and electric. Two undeveloped parcels of land in the East Reservation will be used for the new construction of 200 Capehart replacement units and 361 new units. One parcel is an undeveloped area immediately south of the Heritage Heights Housing, which, for the purposes of this EA will be called “New Heritage Heights”. The other parcel is the current Horse Stable area. All BAFB housing units will be conveyed to a private company and the land on which the units are located will be leased to this private company for a 50 year period of time.

### **2.2 Alternative 1**

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Alternative 1 is unlikely because Congress has extended the privatization legislation. For this alternative, the Air Force will execute an improvement/replacement project consisting of 200 units in accordance with the installations HCP and at the program amount requested by this privatization candidate. As with the Proposed Action, Capehart housing will be demolished and the area will be returned to natural conditions. Additionally, Main Base and Heritage Heights housing will be renovated to varying degrees, and new construction of 200 Capehart replacement units and 361 new units will occur on the undeveloped parcel south of Heritage Heights (New Heritage Heights) and Horse Stable area will be constructed. All units will be placed under the management and operation of the Air Force, not a private company.

### **2.3 No Action Alternative**

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The No Action Alternative is to continue housing operations as status quo. No renovation of current housing units or construction of new housing units will take place. Capehart will remain in place and will not be demolished.

## AFFECTED ENVIRONMENT

### 3.1 Location of the Project Area

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BAFB is located in northwest Louisiana in Bossier parish within the Shreveport Metropolitan Statistical Area (MSA) which encompasses Bossier, Caddo, and Webster parishes. This MSA is one of the largest in Louisiana, with a 2000 population of 392,000 (Bureau of the Census, 2000 Census of Population and Housing). The 22,000-acre (34 sq mi) BAFB is located just east of the Red River and is bounded by Louisiana Highway 71 on the west and US Highway I-20 on the north. Areas surrounding the base are zoned for both residential and commercial use. Figure 3-1 shows the general location of the project area on a United States Geological Survey (USGS) topographic map.

### 3.2 Affected Housing Areas

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#### 3.2.1 Main Base Housing

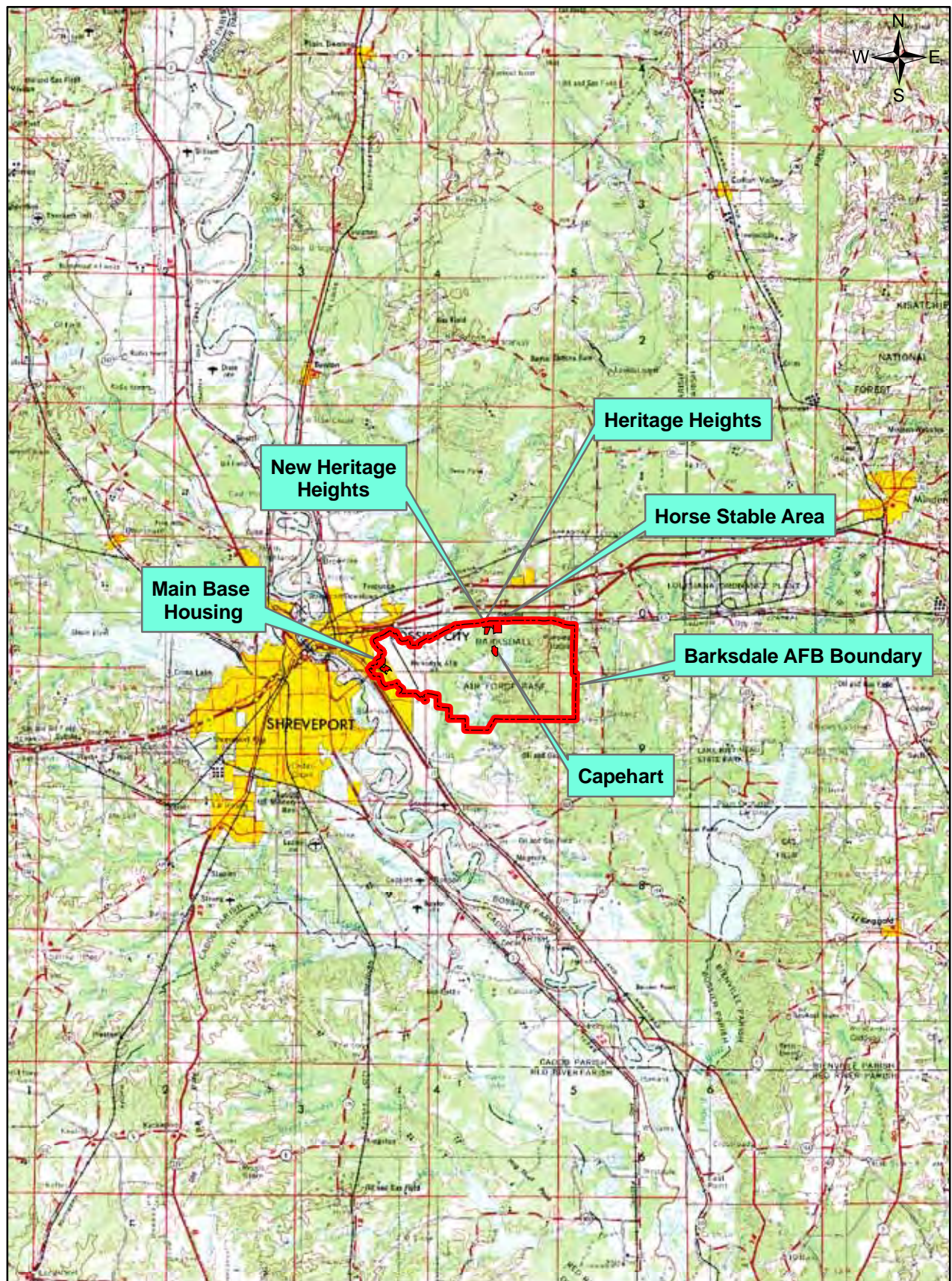
The Main Base Housing is 137.28 acres of developed land located in Sections 2 and 35; Range 13 West Townships 17 and 18 North; east of Highway 71 in Bossier Parish (Figure 3-2). This housing area is bounded on the west by the base golf course, Highway 71, Shreveport Rd, Bossier Road, and Rickenbacker Ave; to the north by Macks Bayou, Bossier Road, and Daedalus Ave; to the south by Rickenbacker Ave, Fairchild Ave, Earhart Ave, and Kenny Ave; and to the east by Davis Ave, Montgolfier Blvd and Bong Ave (Figures 3-3 & 3-4).

This housing area is fully developed with a combination of 401 duplex and single family housing units built in 1930-1998. Two hundred twenty-nine units were built in the 1930 timeframe and are identified as Historical Housing Units. One hundred seventy-two units were built in 1998 and are identified as Historical Compatible Units. The Historical Housing Units consist of 12 floor plan types and the Historical Compatible Units consist of 7 floor plan types. Actions to be taken in this area include only renovation of all 401 units found in the site. No demolition of buildings will take place.



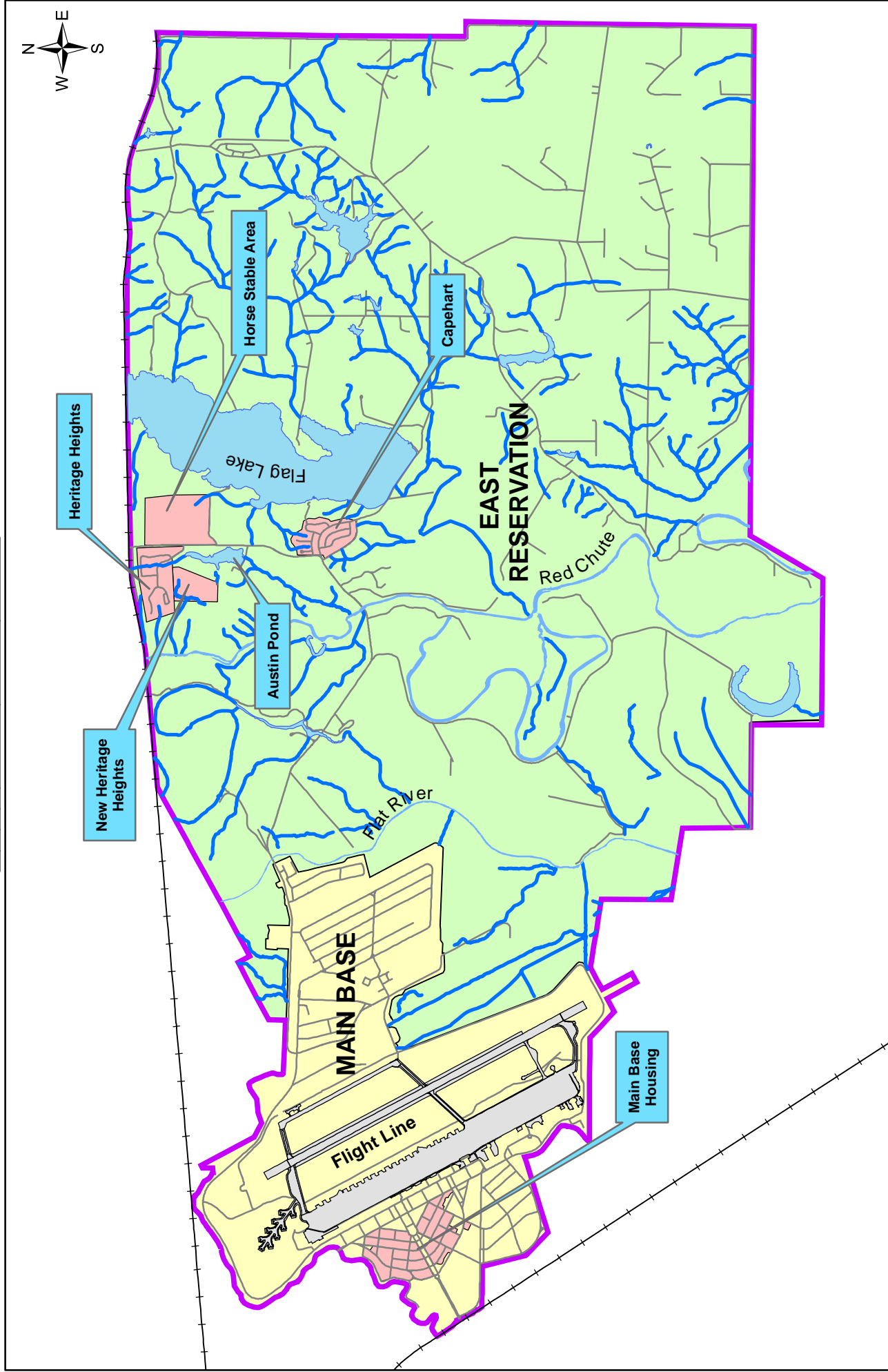
**Photograph 3-1.** Typical housing and landscaping of the Main Base housing area.

0 1 2 4 6 8 10 12 Miles



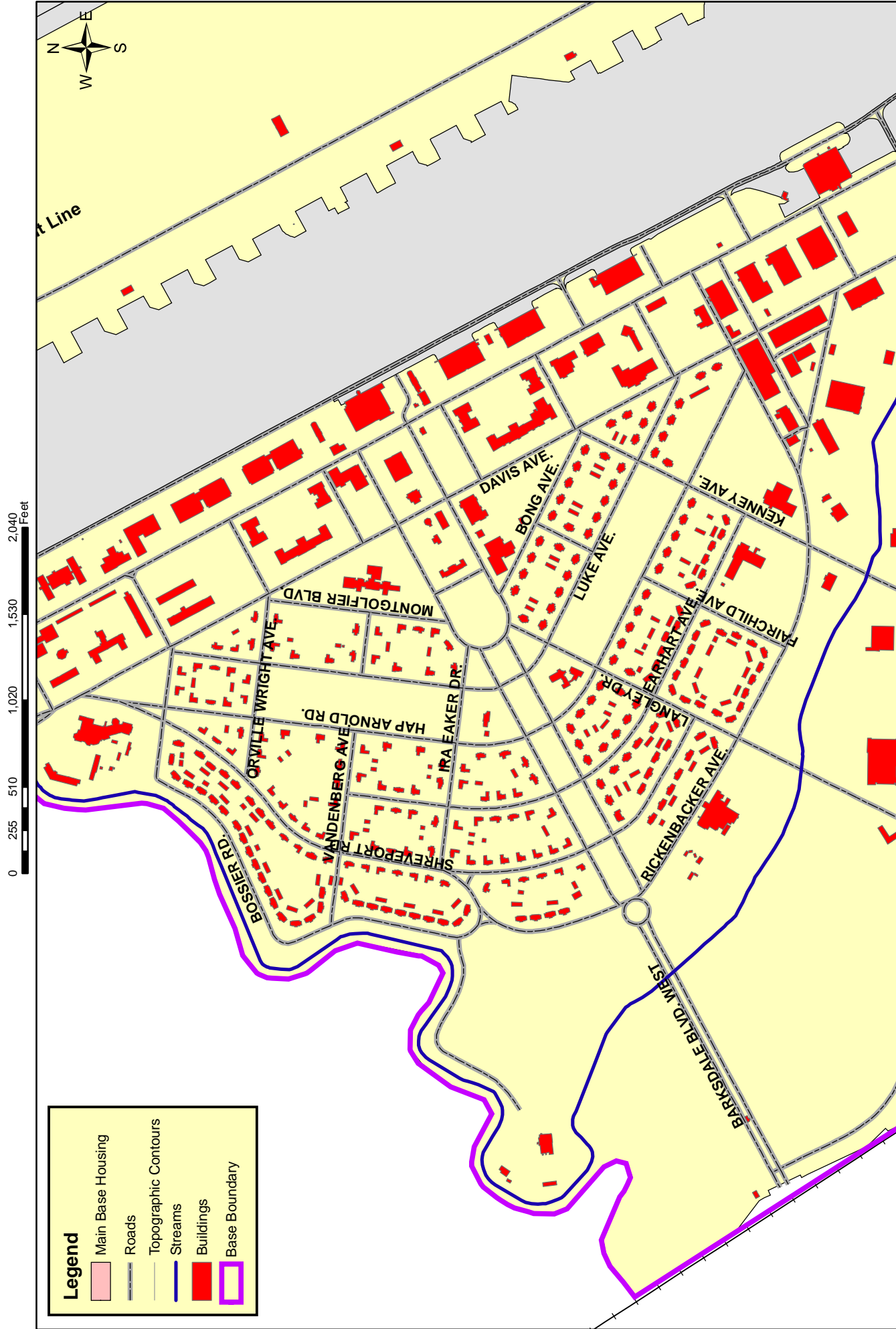
**Figure 3-1. USGS topographic map showing the general location of the project area.**

*Source: USGS 1:250,000 topographic map, Shreveport, LA quad)*



**Figure 3-2. Map of Barksdale Main Base and East Reservation showing the location of the five housing areas to be privatized.**

Source: Barksdale AFB Civil Engineering GIS Database



**Figure 3-3. Barksdale AFB Site Map showing the Main Base Housing Area.**

Source: Barksdale AFB Civil Engineering GIS Database.

0 230 460 920 1,380 1,840 Feet



**Figure 3-4. 2004 aerial photograph of Barksdale AFB showing the Main Base Housing Area.**

Source: Barksdale AFB Civil Engineering GIS Database

### 3.2.2 Heritage Heights

Heritage Heights is located in Sections 27 and 22; Range 12 West; Township 18 North; west of Smith Drive in Bossier Parish (Figure 3-1). This housing area is bounded on the east by Smith Drive, on the north by the base boundary fence, Illinois Central Railroad right-of way and unimproved woodland, and on the west and south by unimproved woodland. The site is fully developed with 128 duplex family housing units built in 1998-1999. The following table summarizes the four basic floor plan unit types in Heritage Heights.

Housing Group	Unit Type	No of Units	Stories	Bdrms	Baths	Year Built
Heritage Heights	JNCOE-A	32	1 (duplex)	2	1	1999
Heritage Heights	JNCOE-B	70	2 (duplex)	2	1 ½	1999
Heritage Heights	JNCOE-C	4	1 (duplex)	3	2	1999
Heritage Heights	JNCOE-D	22	2 (duplex)	3	2 ½	1999



**Photograph 3-2.** Typical housing and landscaping of the Heritage Heights housing area.

Each housing unit in Heritage Heights has an attached single car garage, with individual driveways. Additional parking is available at curb-side. Three playgrounds are also located in Heritage Heights. The first playground is North of Levitow Circle, the second is North of Mathies Circle, and the third is in the loop of Vosler Circle. All playgrounds are new and currently meet the requirements of the U.S. Consumer Product Safety Commission's Guideline for Public Playgrounds and meet accessibility requirements under the Americans with Disabilities Act. Each playground consists of wood chip fall protection surrounded by a concrete sidewalk boarder. Three covered sitting areas serve each of the three playgrounds. Each pavilion is constructed of 6" square steel tubing columns and standing seam metal roofs on a concrete foundation. Each playground is provided with five park benches, two picnic tables, two trash bins, and a water fountain.

The entire street and sidewalk system in Heritage Heights was constructed in the 1998/1999 timeframe when the housing structures were built. All street surfaces consist of 24-ft wide asphalt pavement with concrete curb and gutter systems. Erwin Drive is the primary neighborhood/collector street that enters into Heritage Heights from Smith Drive. Levitow Circle, Mathies Circle and Vosler Circle connect to Erwin Drive as either a loop or cul-de-sacs respectively. The neighborhood streets within Heritage Heights do not intersect with any off-base streets and the general traffic flow and volumes are light within the neighborhoods. The sidewalks, located on both sides of the street, are of concrete construction and are 4 feet in width.

### **3.2.3 New Heritage Heights**

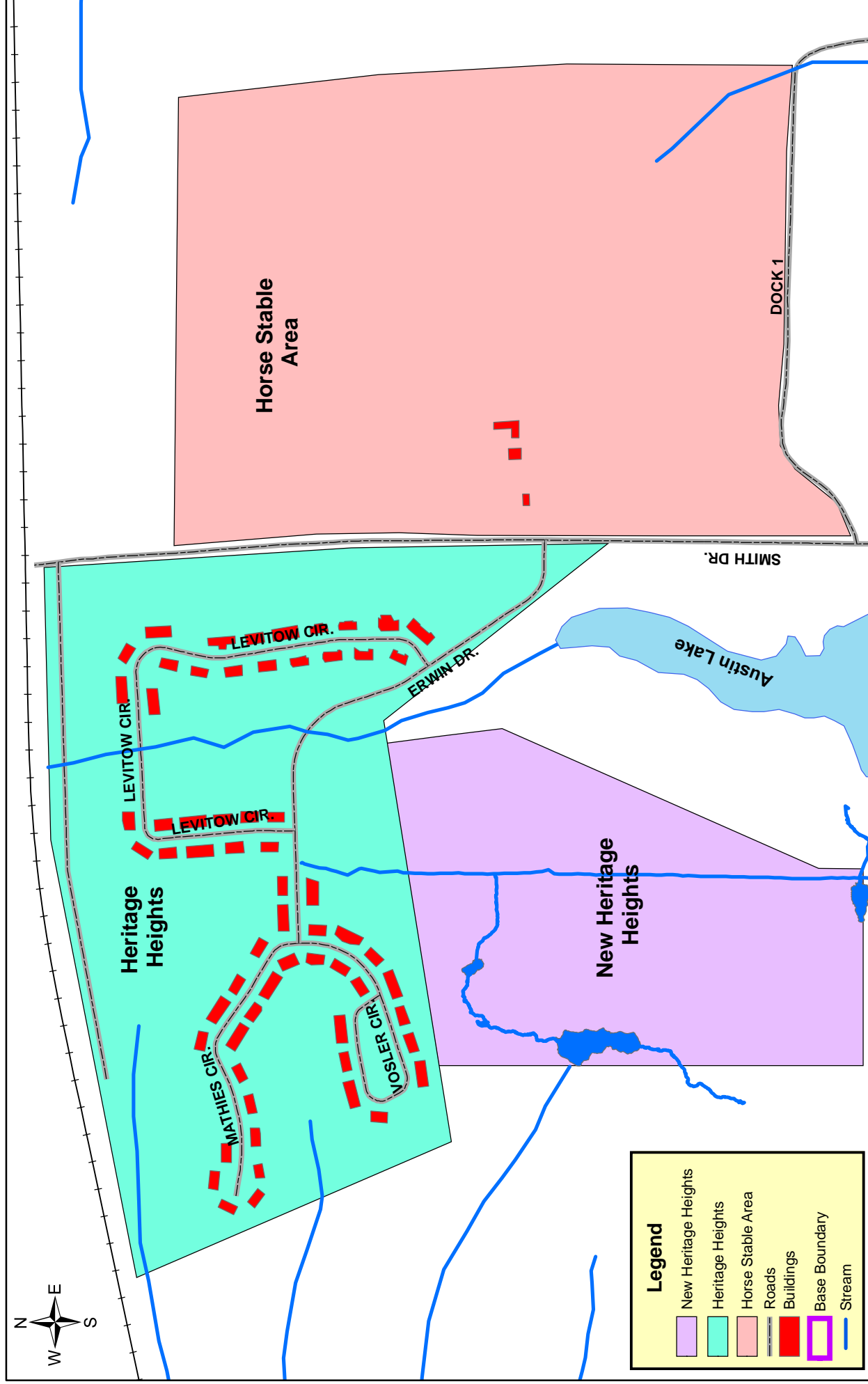
New Heritage Heights is a proposed housing area located in Section 27; Range 12 West; Township 18 North; north of Range Road in Bossier Parish, as shown in Figures 3-5 and 3-6. This parcel is bound on the north by Heritage Heights, on the south and west by unimproved woodlands, and on the east by Smith Drive. This parcel is currently undeveloped, with no structures or infrastructure. A lighted, paved asphalt walking trail traverses the parcel.



**Photograph 3-3.** Hiking trail constructed on the east side of the New Heritage Heights housing area.

### **3.2.4 Horse Stable Area**

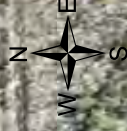
The Horse Stable area is located in Section 27; Range 12 West; Township 18 North east of Smith Drive in Bossier Parish (Figures 3-5 and 3-6). This parcel is bound on the north by the base boundary, an Illinois Central railroad right-of-way, and unimproved woodlands, on the west by Smith Road and on the east and south by undeveloped woodlands. This parcel is currently undeveloped of any housing structures. However, several structures related to horse stabling, training and pasturing activity have been constructed in the area as well as three old concrete masonry facilities that are used for random storage.



**Figure 3-5. Barksdale AFB site map showing the location of the Heritage Heights residential housing area and the location of the future housing areas proposed for the Horse Stable area and New Heritage Heights.**

Source: Barksdale AFB Civil Engineering GIS Database.

0 195 390 780 1,170 1,560 Feet



**Figure 3-6. 2004 aerial photograph of Barksdale AFB showing the Heritage Heights, Horse Stable area, and New Heritage Heights housing areas.**

*Source: Barksdale AFB Civil Engineering GIS Database.*



**Photograph 3-4.** Proposed location for the Horse Stable area.

### **3.2.5 Capehart**

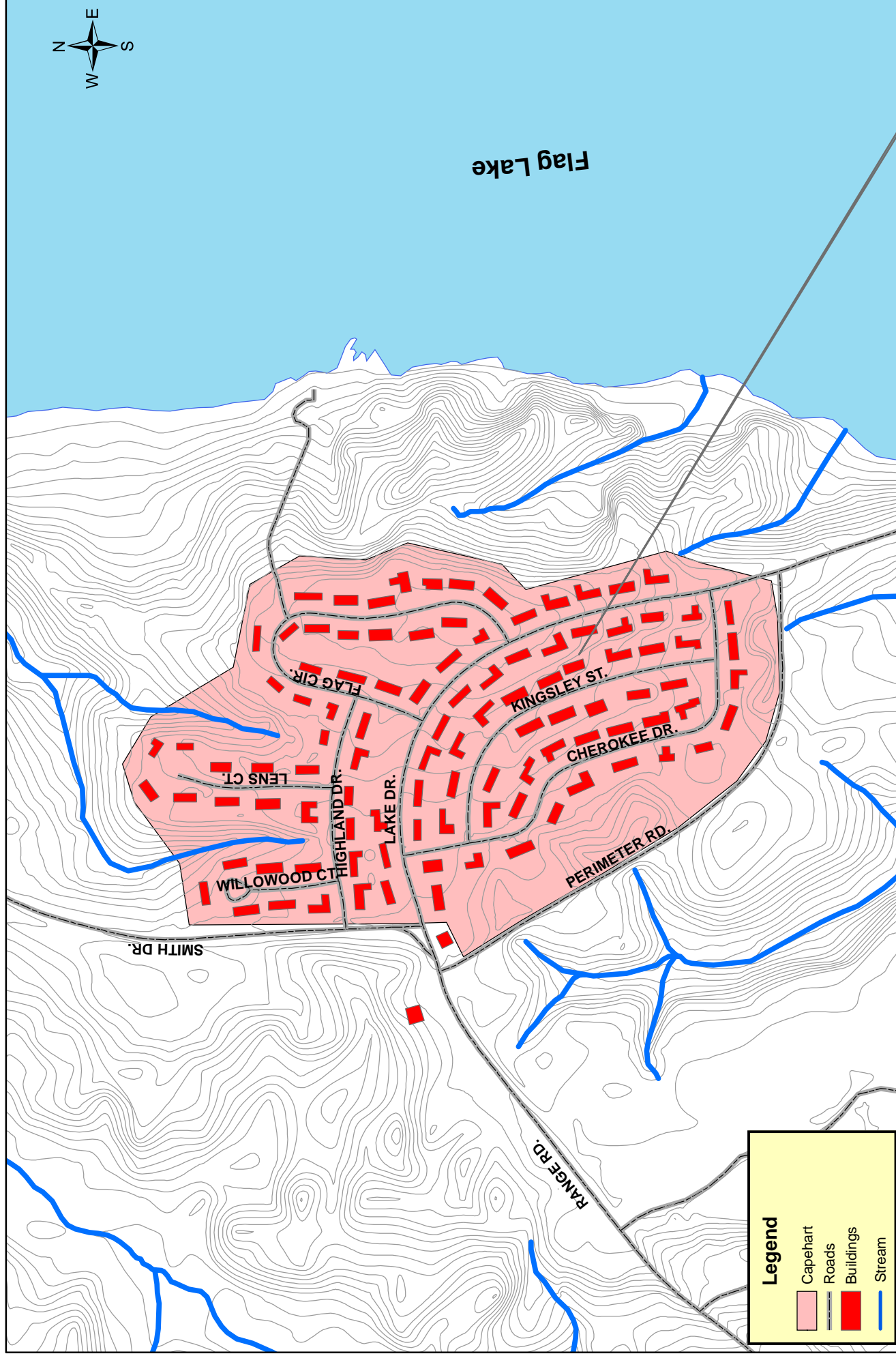
The Capehart housing area is located in Section 27; Range 12 West; Township 18 North; east of the point where Range Road splits to become Smith Drive to the left and Perimeter Road to the right in Bossier Parish (Figures 3-7 and 3-8). This parcel is bound on the east by Flag Lake, on the west by Smith Drive and Range Road and unimproved woodland, on the north by unimproved woodland, and on the south by Flag Lake and unimproved woodland.



**Photograph 3-5.** Typical housing and landscaping of the Capehart housing area.

The site is fully developed with a combination of 200 duplex and single family housing units built in the 1960's. Unit structures are a combination wood and brick frame on concrete slabs with built-up roofs. Exterior finishes are a combination of brick, wood, and metal siding. Housing units include the following designs:

Housing Group	Unit Type	No of Units	Stories	Bdrms	Baths	Year Built
Capehart	NCO-1A	16	1 (duplex)	2	1	1959
Capehart	NCO-1B	16	1 (duplex)	2	1	1959
Capehart	NCO-2A	17	1 (duplex)	2	1	1959
Capehart	NCO-2B	17	1 (duplex)	2	1	1959
Capehart	CG-7A	6	1 (duplex)	3	2	1959
Capehart	CG-7AC	1	1 (duplex)	3	2	1959
Capehart	CG-7B	1	1 (duplex)	3	2	1959
Capehart	CG-7BC	1	1 (duplex)	4	2	1959
Capehart	FG-3	9	1 (duplex)	3	2	1959
Capehart	GEN1	1	1 (single)	4	2	1959
Capehart	NCO-5A	4	1 (duplex)	3	2	1959
Capehart	NCO-5B	4	1 (duplex)	2	1	1959
Capehart	NCO-5BC	15	1 (duplex)	2	1	1959
Capehart	NCO-5AC	15	1 (duplex)	4	2	1959
Capehart	NCO-9A	20	1 (duplex)	3	2	1959
Capehart	NCO-9B	20	1 (duplex)	3	2	1959
Capehart	CG4A	16	1 (duplex)	2	1	1959
Capehart	CG4B	16	1 (duplex)	3	2	1959



**Figure 3-7. Barksdale AFB site map showing the location of the Capehart residential housing area.**

Source: Barksdale AFB Civil Engineering GIS Database.



**Figure 3-8. 2004 aerial photograph of Barksdale AFB showing the Capehart housing area.**

*Source: Barksdale AFB Civil Engineering GIS Database.*

### 3.3 Topography and Physiography

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Barksdale is located in the Western Gulf Coastal Plain with topography that is characterized by flat alluvial deposits and wide floodplains along the major drainage ways. Topography is a constraint in isolated areas of BAFB, primarily on the east side where sandy slopes impede possible construction. The base is moderately dissected by many streams superimposed on the gentle southward slope. Slopes are generally 0 to 3 percent over the majority of the nearly level terraces. Topographic relief on the base ranges from 136 ft mean sea level (MSL) in the Red River floodplain (Flat River at the BAFB south boundary) to 358 ft MSL in the northeast uplands (ridgeline north of Harmon Lake). The land surface in the floodplain (west section of BAFB) is lower and generally level. Local relief in the floodplain is seldom more than 10 ft. A well-defined escarpment marks the relatively abrupt rise from the floodplains to the uplands, with some bluffs rising 70 ft or more above Red Chute Bayou. The most highly dissected topography present on the base is found in the northeastern section and in the ravine areas along the western escarpment where intermittent streams have down-cut through older strata.

The Main Base Housing area lies at an average elevation of 184 ft MSL while the other housing areas lie at an elevation of 200 to 220 ft MSL. Topography of the Main Base Housing area is relatively flat. Capehart, Heritage, New Heritage, and Horse Stable housing areas lie in rolling topography.

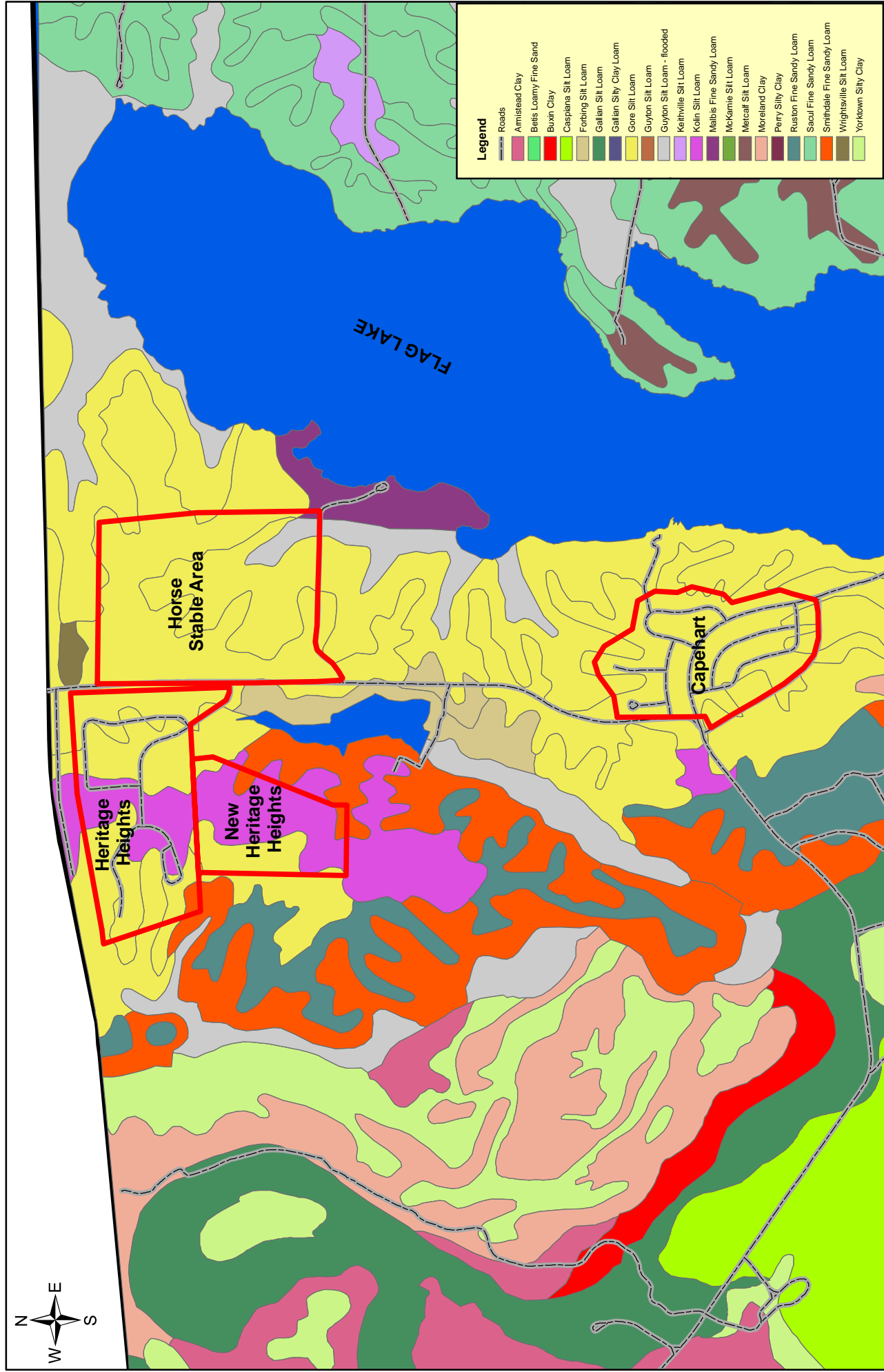
BAFB encompasses portions of three significant physiographic units common to the Gulf Coastal Plain: the Red River alluvial valley, the Tertiary uplands, and the broad stream terraces (locally known as flatwoods). Major features of the Red River alluvial valley include river meanders, cutoffs and meander scars, winding tributary channels, and large wetland areas. The Tertiary Uplands are characterized by gently sloping to hilly areas, steep escarpments and broad-crested ridges with knoll and gully development along the downslope margins. The stream terraces or flatwoods are generally level to gently sloping; dissection may be prominent along terrace margins adjacent to streams. The housing areas lie in the Red River alluvial valley and the Tertiary uplands.

### 3.4 Soils

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The Main Base area has not been recently mapped for soils, but, more than likely, the main base is located on urban soils that have been developed for construction of roads, structures, and other amenities associated with military bases. Because these soils have been intensively developed, they have lost their unique characteristics and can be best identified as urban land.

The National Resource Conservation Service (NRCS) completed a soil survey for the "forested area" of BAFB, or all land east of the airfield, in 1990 (Figure 3-9). The Capehart housing area lies on Gore silt loams. The Gore series consists of very deep, moderately well drained, very slowly permeable soils that formed in thick clayey fluvial sediments on Pleistocene age terraces. Slope is predominantly 1 to 5 percent but can be as much as 20 percent near escarpments that are adjacent to drainage ways. Runoff is medium to very rapid. Like the Forbing series, principal vegetation found on this soil consists of mixed hardwood and pine forest, with small acreages sometimes used as cropland or pastureland. Permeability is very slow. A water table is 6 feet or more below the surface.



**Figure 3-9. Soil Mapping Units found on the Capehart, Horse Stable area, Heritage Heights, and New Heritage Heights residential housing areas.**

*Source: Barksdale AFB Civil Engineering GIS Database.*

The majority of the Heritage Heights housing area lies over Gore silt loams. However, the central portion of this housing area also lies over Kolin Silt Loams. The Kolin series consists of very deep, moderately well drained, very slowly permeable soils that formed in loamy sediments overlying clayey sediments. These soils are on uplands and terraces formed in the Pleistocene Age. Slopes range from 1 to 8 percent. The water table is perched above a clayey B horizon at 1.5 to 3 foot depth, December through April. Most of this soil supports mixed hardwood and pine woodlands. A small acreage is used for pasture and cultivated crops. The area around Heritage Heights is currently developed and was used for pasture and timber production in the past.

The New Heritage Heights housing area lies over three different soil mapping units. Gore silt loams are found on the west side of the parcel as well as the north east side. Kolin silt loams dominate this parcel and are found mostly in the central and southern portions. Smithdale fine sandy loams extended into the eastern side of New Heritage Heights. The Smithdale series consists of deep, well drained soils that formed in thick beds of loamy sediments. Permeability is moderate. These soils are found on ridgetops and hillslopes in dissected uplands of the Southern Coastal Plain. Slopes range from 1 to 45 percent and runoff ranges from slow to very rapid. Most areas of the Smithdale soils are used for woodland, principally loblolly, longleaf, and shortleaf pines. Cleared areas are used primarily for growing pasture and a few areas are cropped to corn, cotton, soybeans, and small grains. The new heritage Heights housing area has recently been clearcut for forest products and is now in the second year of recovery from that operation. As with the other parcels in this area, New Heritage Heights was used for pasture and the production of forest products in the past.

The Horse Stable area is almost completely dominated by Gore silt loams. One of the ephemeral streams draining this area is dominated by Guyton silt loams—flooded. The Guyton series consists of very deep, poorly drained and very poorly drained, slowly permeable soils that formed in thick loamy sediments. These soils are usually found on local stream flood plains and in depressional areas on late Pleistocene age terraces. Slopes range from 0 to 1 percent. Most areas are in woodland. Water oak, baldcypress, water tupelo, loblolly pine, and shortleaf pine are dominant in the drainage ways of this soil. On upland broad terraces, baldcypress and water tupelo generally are absent and sweetgum dominates. Areas supporting these soils are used as pastureland or cropland.

Soils pose a minor constraint to development that generally coincides with floodplain and wetland areas. Generally, the soils at BAFB are susceptible to erosion if denuded. This problem has occurred in open terrain, along dirt roads and drainage ways, and around built-up areas. A combination of vegetative and drainage system maintenance is necessary to address this problem.

None of the soils in the area of impact are currently being used for crop production. However, some of the soils are listed as prime farmland soils and require review by the NRCS for Farmland Conversion Impact Rating (Form AD-1006). The form was prepared for and reviewed by the NRCS on July 26, 2005. The NRCS determined that the New Heritage Heights area contained approximately 26.24 acres of Kolin silt loams, 1 to 5 percent slopes which are prime and unique farmland soils and 0.45 acres of Gore silt loams, 1 to 5 percent slopes which are considered Statewide and Local Important Farmland. This comprised approximately 0.0073 percent of the farmland in Bossier Parish. The site was given a relative farmland value of 68 and assessed at a value of 65 for a total score of 133 points out of a possible 260 points.

The Horse Stable area contains 0.36 acres of prime and unique farmland (Mabis fine slity loam 1 to 5 percent slopes) and 63.32 acres of Statewide and Local Important Farmland (Gore silt loams, 1 to 5 percent slopes). This comprises 0.017 percent of the farmland in Bossier Parish. The site was given a relative farmland value of 44 and assessed at a value of 60 for a total score of 104 points out of a possible 260 points.

Generally speaking, this assessment indicates that the loss of the prime farmland and farmland of statewide or local importance would not be considered a significant impact. A copy of Form AD-1006 is provided in Appendix A.

### 3.5 Climate

The climate in Louisiana is governed largely by the state's proximity to the Gulf of Mexico, its subtropical latitude, and its location relative to an extensive land mass to the north. Prevalent winds are from the south or southeast with moist air from the Gulf producing high levels of humidity. Temperatures range in the summer from an average of 85°F to 95°F in the afternoons, and 65°F to 75°F in the early morning (Table 3-1). Physical conditions are favorable for regular development of isolated convectional thunderstorms scattered across the state. Occasional periods of hot droughty weather, characteristic of the continental climate of the plains states, interrupt prevailing summer moist conditions in north Louisiana. Tropical disturbances, which spawn high winds and excessive rainfall, regularly develop in the Gulf of Mexico and occasionally affect north Louisiana. In winter, temperatures are more variable, ranging on average from 55°F to 65°F in the afternoons and from 40°F to 50°F in early morning hours; although higher and lower temperatures do occur. Periodic continental cold fronts from the northwest displace the warmer maritime air. Freezing temperatures are usually recorded 30 to 40 days in an average year.

**Table 3-1: BAFB Climatic Conditions**  
Temperature in degrees Fahrenheit / Precipitation in inches  
(based on 30 years of records)  
*Source: 2004 Barksdale AFB INRMP*

MONTH	AVERAGE TEMP.	ABSOLUTE MIN. TEMP.	ABSOLUTE MAX. TEMP.	AVERAGE PRECIPITATION
January	47	3	84	4.84
February	51	1	84	4.09
March	58	15	90	4.15
April	66	32	96	4.57
May	73	40	98	4.79
June	81	56	102	3.34
July	83	61	107	3.75
August	83	58	106	2.55
September	77	41	103	2.28
October	68	30	98	2.81
November	55	16	88	4.21
December	49	9	85	4.94
<b>YEAR AVG.</b>	<b>66</b>	<b>-</b>	<b>-</b>	<b>46.28</b>

BAFB is located in an area with a humid, subtropical climate characterized by hot summers and mild winters. Snow and sleet are infrequent and occur in small quantities. Average annual rainfall is 46.28 inches. Rainfall is evenly scattered through the seasons, averaging 4.58 in per

month, with the greatest rainfall in the spring and lowest rainfall in the fall. Average daily humidity varies from 85 percent at sunrise to 45 percent by early afternoon. The average number of days with thunderstorm activity is 57, with peak months in May, June, and July. Hurricanes and tropical storms are not common to the area; however, short periods of precipitation can occur throughout the year. Due to the high water table present in the area, all buildings and facilities at BAFB are constructed on terrain with elevations greater than 160 MSL. Relative humidity is high throughout the year with monthly values from 83 to 91 percent. Mean annual wind speed is 8 miles per hour.

### **3.6 Minerals and Energy Resources**

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BAFB is located in an area where oil and natural gas resources have been extracted for many years. Because of favorable subsurface conditions, oil and gas reserves have been encountered at relatively shallow depths (3,000 to 7,000 ft. below land surface). Several significant petroleum fields are located on BAFB. *The Sligo Oil and Gas Fields* extend onto the east section of BAFB. The installation allows the development of oil and gas reserves on its land in the east section of the base through leases with private firms. The Bureau of Land Management (BLM) regional office in Jackson, Mississippi has oversight responsibilities for minerals production on federal lands. Surface management issues are managed jointly by the BLM and Barksdale Natural Resources (BNR). Forest fragmentation is an important management issue. BNR is working to minimize further forest fragmentation, both the number and extent of discontinuities, caused by oil and gas development. The petroleum lessees are responsible for following construction, maintenance, and environmental regulations.

It is important to note that the extreme southern portion of the Capehart housing area encroaches into the Chesapeake oil lease (Figure 3-10). This area was being considered for further development, which might presents some problems. However, this housing area is going to be completely demolished and restored to natural conditions.

### **3.7 Visual Resources**

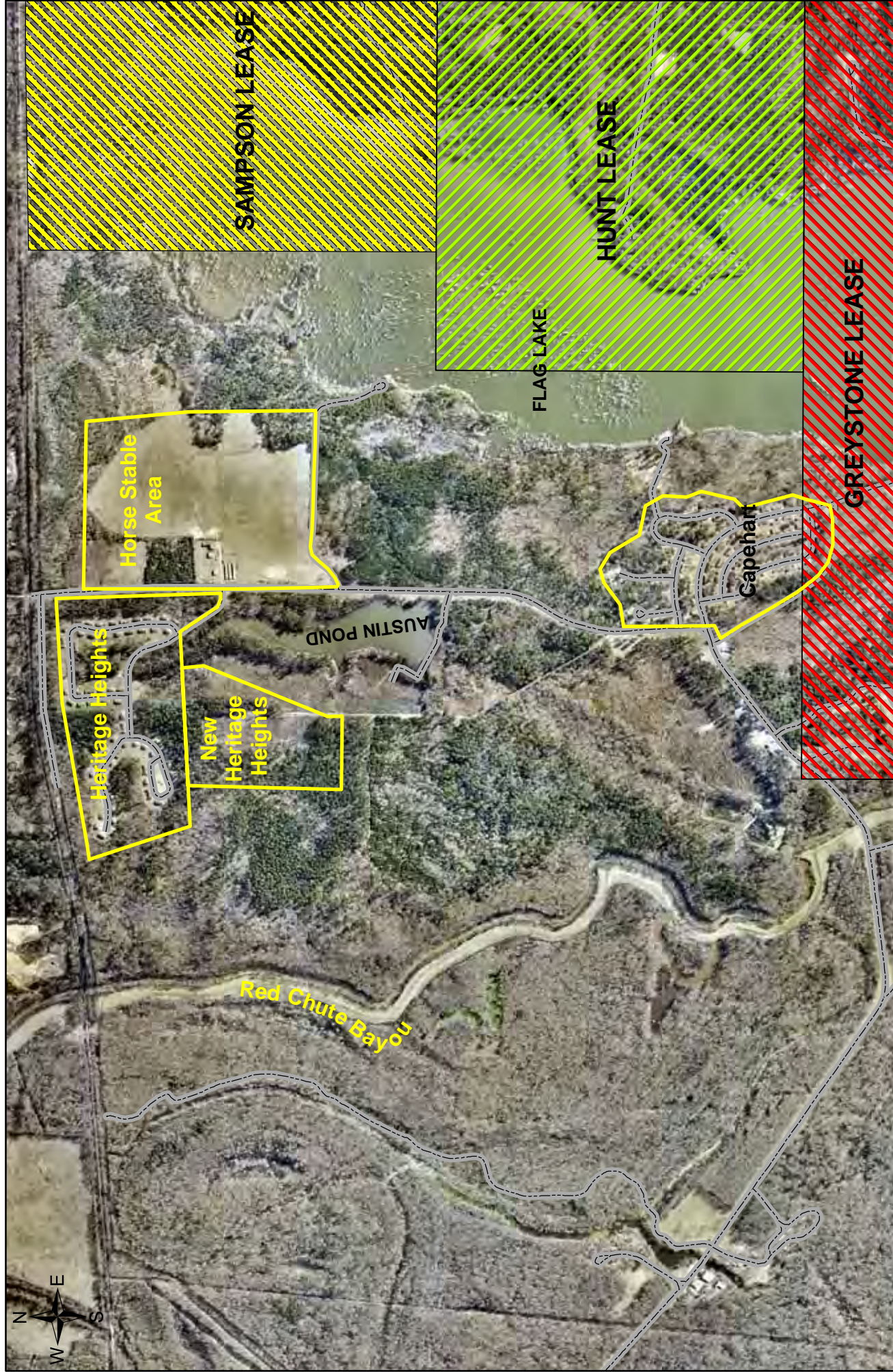
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The most obvious visual resource found at BAFB is the historic and cultural landscape found on the main base. The Main Base Housing area is located in the historic district which is typified by military architecture commonly used in the pre and post World War II years. Current plans are to continue to preserve the architectural and historic vernacular of this portion of the air base. Visual resources found on the east reservation include a rural landscape dominated by trees and open pasture. Both the Heritage Heights and Capehart housing areas are located in rural settings and surrounded by mature hardwood and conifer forests. New Heritage Heights will be constructed in an area that was recently clearcut, but is also surrounded by mature forest. The Horse Stable area is presently located in an open pasture surrounded by mature forest.

### **3.8 Cultural Resources**

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BAFB aggressively and effectively protects its rich cultural heritage. In 2000, the Cultural Resource Management (CRM) Manager at BAFB received an award from Head Quarters (HQ) Air Combat Command (ACC) for Individual Excellence in Cultural Resource Management. In addition, BAFB enjoys an excellent working relationship with the Louisiana State Historic Preservation Officer (SHPO), with whom it shares a Programmatic Agreement to resolve minor maintenance issues on historic structures. This arrangement eliminates the need for excessive time-delaying consultations.



**Figure 3-10. Gas leases located in the vicinity of the housing areas in the East Reservation.**

Source: Barksdale AFB Civil Engineering GIS Database.

A Cultural Resources Management Plan (CRMP) for the base was completed in July 1997 and updated in 2002. This plan provides guidelines and procedures to enable BAFB to meet its legal responsibilities for the identification, evaluation, and treatment of cultural resources under its jurisdiction. Such regulations include:

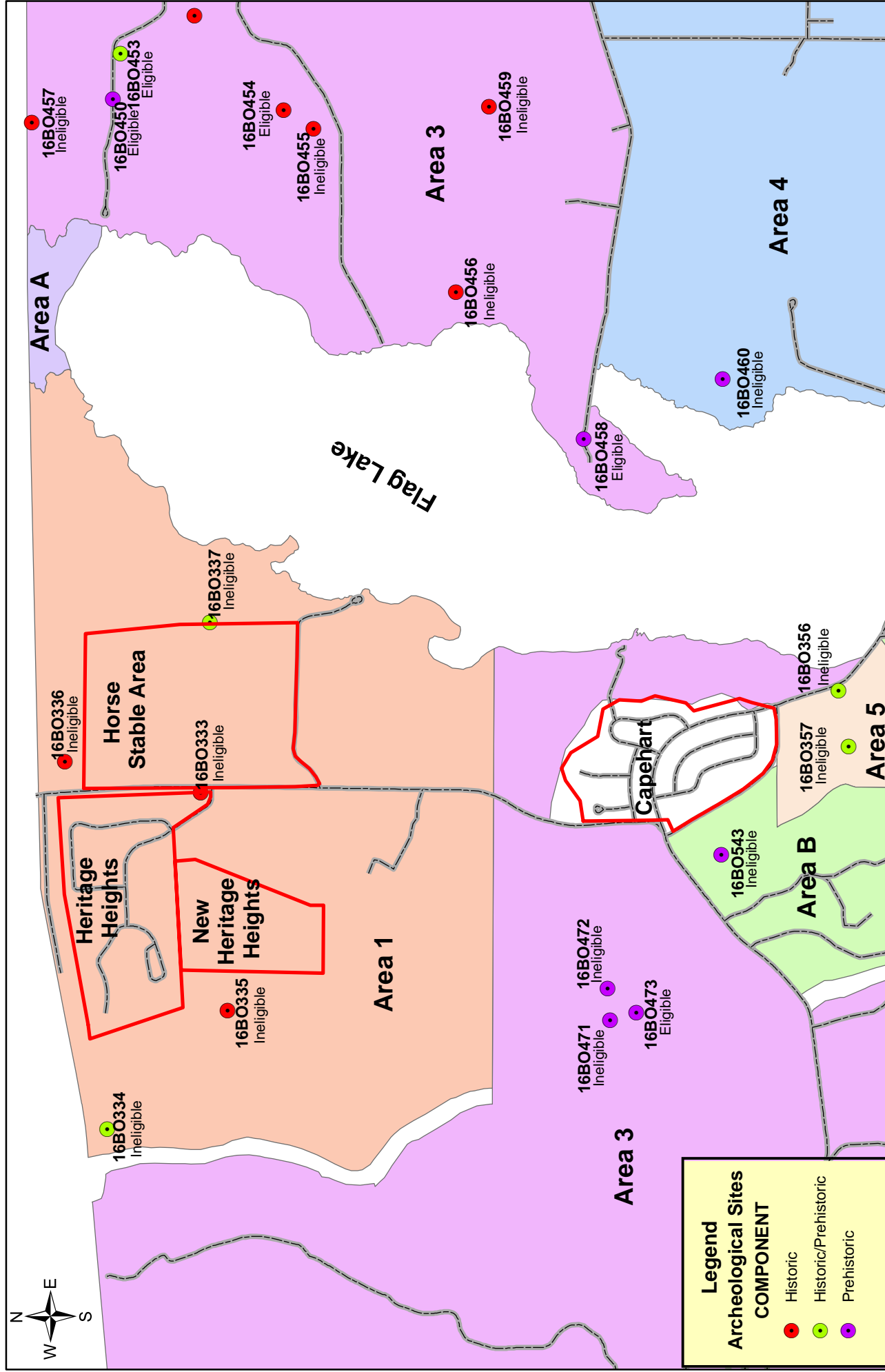
- The National Historic Preservation Act (NHPA) of 1996, as amended through 1992; Executive Order 11593; the National Environmental Policy Act (NEPA) of 1969; the American Indian Religious Freedom Act (AIRFA) of 1978; Americans with Disabilities Act (ADA) of 1992; Archeological Resources protection Act (ARPA) of 1979; the Native American Graves Protection and Repatriation Act (NAGPRA) of 1990; and accompanying regulations, particularly Air Force Instruction (AFI) 32-7065, prescribe management responsibilities and standards of treatment for historic properties. Curation standards for federally owned and administered collections are specified in 36 CFR 800, Protection of Historic Properties; and 36 CFR 60 sets forth criteria for eligibility for inclusion in the National Register of Historic Places (NRHP).
- State laws that cover such activities include the Louisiana Unmarked Human Burial Sites Preservation Act (Chapter 10-A) and the Archaeological Code of Louisiana, although these state regulations are superseded by federal regulations on federally owned installations and are not germane in this context, except insofar as the installation might wish to follow the regulations as a professional courtesy.

The development of this CRMP in consultation with the Louisiana SHPO and the Advisory Council on Historic Preservation (ACHP) is an important step toward achieving compliance with NHPA and associated federal regulations.

By definition, cultural resources that have been evaluated and identified as eligible for inclusion in or formally listed on the NRHP are considered to be “historic properties.” These historic properties may be archaeological sites (both prehistoric and historic), buildings, structures, objects, and districts.

### **3.8.1 Archaeological Resources**

BAFB has conducted a series of Phase I and Phase II archaeological surveys from 1995 to 1998 that encompassed a large portion of BAFB. A 4,000-acre survey was completed in July 1995, which identified eight historic sites that were potentially eligible for inclusion on the NRHP. A 5,700-acre survey was completed in February 1997, which identified five sites for potential nomination to the NRHP. These included two prehistoric, two historic, and one both prehistoric/historic sites. Another 3,500 acres were surveyed and completed in June 1997. This study resulted in twelve sites that have the potential for nomination to the NRHP. Eleven of these sites are historic, and one is prehistoric. The final Phase I survey of 3,505 acres was completed in April 1998. One site was deemed eligible for inclusion on the NRHP. This site has both historic and prehistoric significance. A Phase II survey was conducted of eight historic sites in December 1997, but none of the sites were deemed eligible for nomination to the NRHP. Two Phase II archaeological studies were conducted in 2004-2005 on a total of 8 sites. Results of those studies are not yet available. Funding requests for future study of all potentially eligible sites has been entered into the A106 database. HQ ACC has validated funding, and the base is awaiting allocation of the funds to complete the studies. In the interim, all eligible sites must not be disturbed. All archaeological and historic sites identified in these studies and lying in the vicinity of the project area are shown in Figure 3-11. The eligibility of all sites in the vicinity of the project area has been determined.



**Figure 3-11. Archeological sites located in the vicinity of the East Reservation Housing Areas. Each point is labeled with the site ID, eligibility for NHR, and color coded according to component.**

Source: Barksdale AFB Cultural Resource Management GIS Database.

Previous studies were completed as early as the 1950's. A number of potential sites were found adjacent to Willon Creek and the Flat River. These sites, dating back to the Caddo II and III periods (1150 to 1500 A.D.), include small farmsteads and hamlets without mounds, as well as three sites that have included mounds. During the course of these preliminary investigations, a historic cemetery, Old Stonewall Cemetery, was found on the southeast corner of the Main Base. Over the past 40 years, 478 graves have been excavated, and it is estimated that over 150 more graves still remain on the site. Current plans are to develop this area for the expansion of the commissary and for an expanded parking lot. Some graves may be disturbed during construction. It is important to note that even though the cemetery is not covered on the NRHP, it is protected by existing Louisiana legislation.

### **3.8.2 Native American Issues**

BAFB personnel initiated contact with the Caddo Indian Tribe in 1998 by informing them of the results of previous studies. On May 8, 2002, the base signed a Memorandum of Agreement (MOA) with the Caddo in the event of inadvertent discovery of Native American remains and/or funerary items. BAFB is the first base in the ACC to prepare such an MOA, and it is one of only a handful of bases in the Air Force to do so. Such an agreement greatly facilitates compliance with directives from the NAGPRA.

The Caddo Indian Tribe has specifically requested that archaeological surveys of prehistoric sites be completed, as they are very interested in the results. To date, no Native American remains or funerary items have been found.

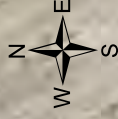
### **3.8.3 Architectural Resources**

As part of the BAFB's effort to preserve its unique heritage, a petition was approved on 13 April 1992 listing 264 buildings on the NRHP (Figure 3-12). These buildings, located in the Barksdale historic district, were part of the original base construction completed between 1931 and 1941. Buildings are of French Colonial Architectural style and were designed and built in the 1930's. BAFB has the largest collection of historic structures of any military installation in the state of Louisiana, as well as one of the largest in the Air Force worldwide. Two hundred sixty-four structures of historic significance exist in the historic district.

BAFB completed work on a Historical District Management Plan in January 1995. This report identifies the historic resources that the base must consider during future development and recommends suitable preservation and rehabilitation requirements. A data management system, including both hard copy and computer graphics and photographs, was created to organize all inventory information and to aid in the management of the historic district.

The historic district is both an asset and a constraint to future base planning and expansion. Because strict guidelines cover development of historic districts, the base must carefully weigh operational and mission development with the maintenance of the historical flavor of the Main Cantonment area. As shown in Figure 3-12 the entire Main Base Housing area lies within the BAFB historic district.

0 337.5 675 1,350 2,025 2,700 Feet



**Figure 3-12. Location of the Main Base housing area with respect to the Historic District.**

*Source: Barksdale AFB Civil Engineering GIS Database.*

### 3.9 Natural Areas

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Although most of the vegetation structure and composition at BAFB has been altered over the last 150 years since pre-settlement times, several ecologically significant natural areas remain on the base. Twelve sites possess high-quality natural communities and are considered worthy of exemplary natural area designation (LNC, 1997). These areas most closely resemble the best estimate of the structure and composition of presettlement plant communities of the early 1800's. Other criteria used to assess natural areas include biotic diversity of the site, presence of stenotypic (narrow ecological niche) native species, absence of exotics, time since last significant perturbation, extent of habitat, and potential recovery from unnatural disturbance.

Natural Areas (NA) in the vicinity of the housing areas include (Figure 3-13):

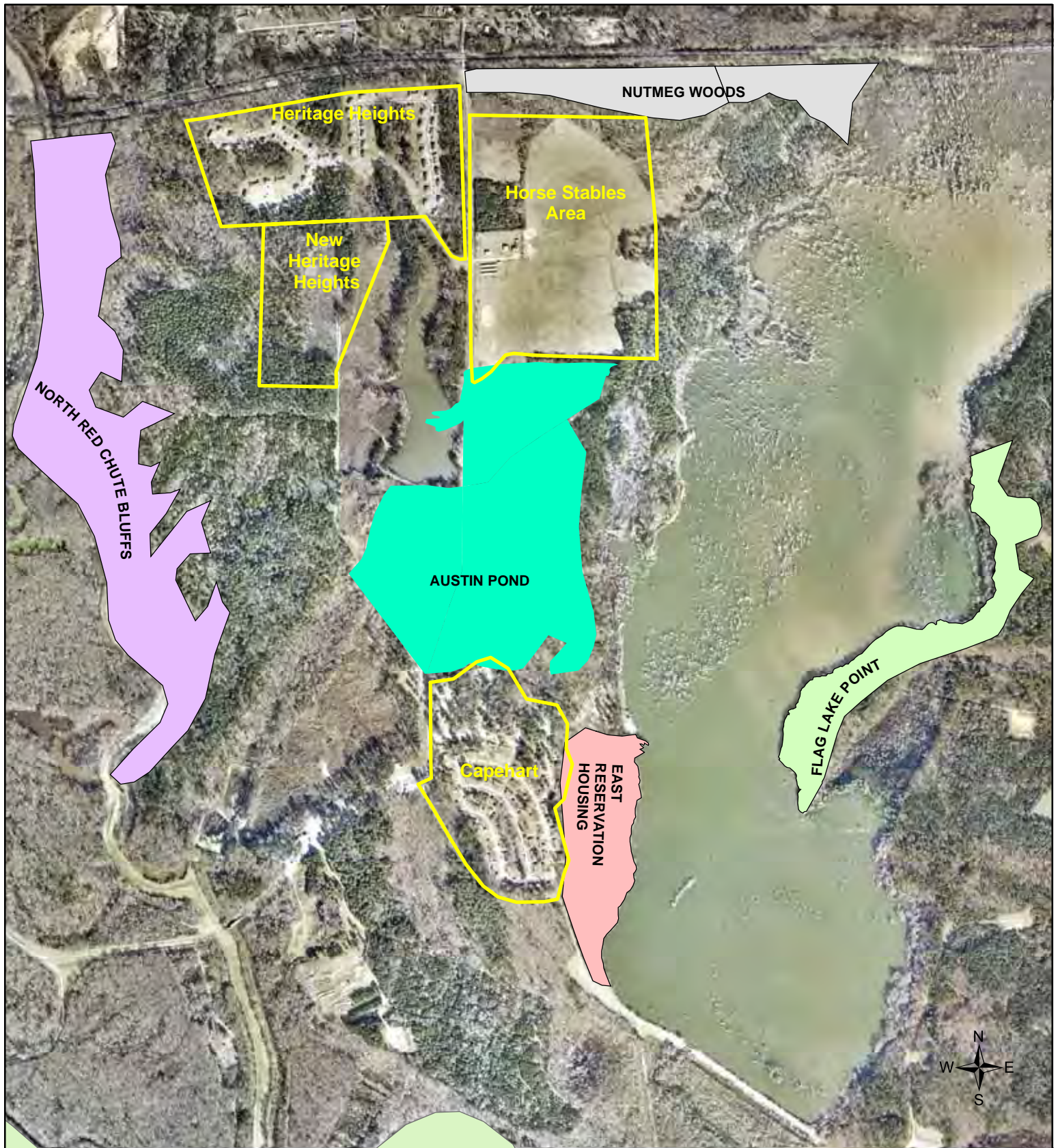
- **Austin Pond NA** – A mosaic of prairies and calcareous forest south and east of Austin Pond, the Austin Pond Natural Area contains small linear prairie openings. A mildly to moderately calcareous forest also occurs east of Bodcau Road, just north of the East Reservation housing complex.
- **Nutmeg Woods NA** – This area is a wet-mesic calcareous forest along the northern boundary of the base, west of Flag Lake. The site is named for the numerous nutmeg hickories (uncommon in Louisiana) scattered throughout the area and contains the highest quality wet-mesic calcareous forest found at BAFB.
- **Flag Lake Point NA** – This peninsula-like area is a high quality example of a relatively undisturbed mixed hardwood-loblolly pine forest on rich mesic slopes leading to Flag Lake.
- **North Red Chute Bluffs NA** – The North Red Chute Bluffs NA is a relatively narrow band of steep slopes on a small escarpment adjacent to and east of Red Chute Bayou. The site is a composite of mixed hardwood - loblolly pine forest and moderately calcareous forest with a narrow zone of bottomland hardwood forest adjacent to Red Chute and small tributaries near Red Chute.
- **East Reservation Housing NA** – This site is in a topographically diverse area adjacent to the west side of Flag Lake, just south of the East Reservation housing complex. As the name implies, this site is adjacent to the East Reservation Housing area and provides an important natural park-like buffer for this urban region.

### 3.10 Water Resources

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In general, water quality for surface waters at BAFB is good, and parameters for water quality are within allowable limits. Activities at the installation have affected water quality slightly; however, the installation is meeting mission requirements and is operating without detriment to water resources.

Potable water for BAFB is provided by the City of Shreveport from surface water sources. All potable wells once used on base have been taken out of operation and would require extensive maintenance and repairs to become operational again.



**Figure 3-13. Location of natural areas found in the vicinity of the East Reservation housing areas.**

*Source: Barksdale AFB Civil Engineering GIS Database.*

### **3.10.1 Regulatory Requirements**

The Louisiana Environmental Quality Act and the Louisiana Water Pollution Control Law provide the regulatory mechanisms for the Louisiana Department of Environmental Quality (DEQ) to protect and enhance the quality of Louisiana's surface and ground water. The Water Quality Management Division of the Office of Water Resources is responsible for monitoring and assessing the quality of Louisiana's surface and ground water by enforcing the state and federal laws.

Meeting the State of Louisiana's surface water quality standards is a primary concern for the installation. Potential sources of non-point source (NPS) pollution related to natural resources management include silvicultural activities, as well as the construction and maintenance of firebreaks, roads, and other improvements.

The Clean Water Act (33 USC 1251 et. seq., as amended) establishes federal limits, through the Louisiana Pollutant Discharge Elimination System (LPDES) on the amounts of specific pollutants that are discharged to surface waters in order to restore and maintain the chemical, physical, and biological integrity of the water. A LPDES permit would be required for any change in the quality or quantity of wastewater discharge and/or storm water runoff from construction sites where one or more acres have been disturbed. Section 404 of the Clean Water Act regulates the discharge of fill material into waters of the U.S.

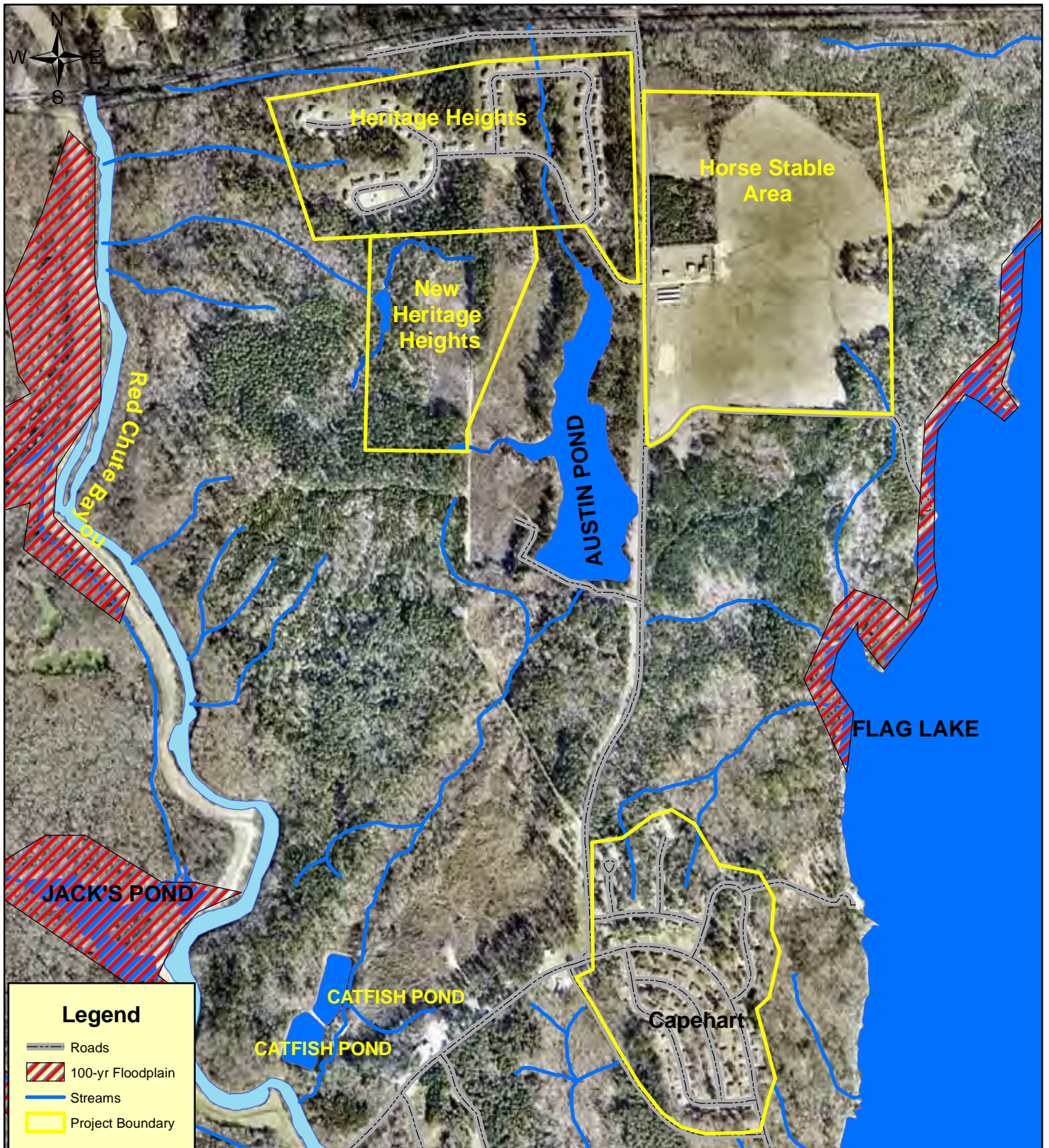
### **3.10.2 Groundwater**

The top of the Red River alluvial aquifer ranges from 10 to 60 ft below the ground surface. Water levels within the alluvial aquifer are responsive to adjacent surface water bodies. Some recharge occurs from the underlying Wilcox-Carrizo Aquifer, but most is derived from the infiltration of precipitation and local streams. Discharge occurs by natural processes into nearby surface water bodies, with regional groundwater flow toward the Red River south and west of the Main Base area. The only constraint to development is that construction must account for any localized high water tables when placing utilities and foundation. Construction has therefore been limited to land areas above 160 ft. MSL in elevation.

### **3.10.3 Floodplains and Drainage**

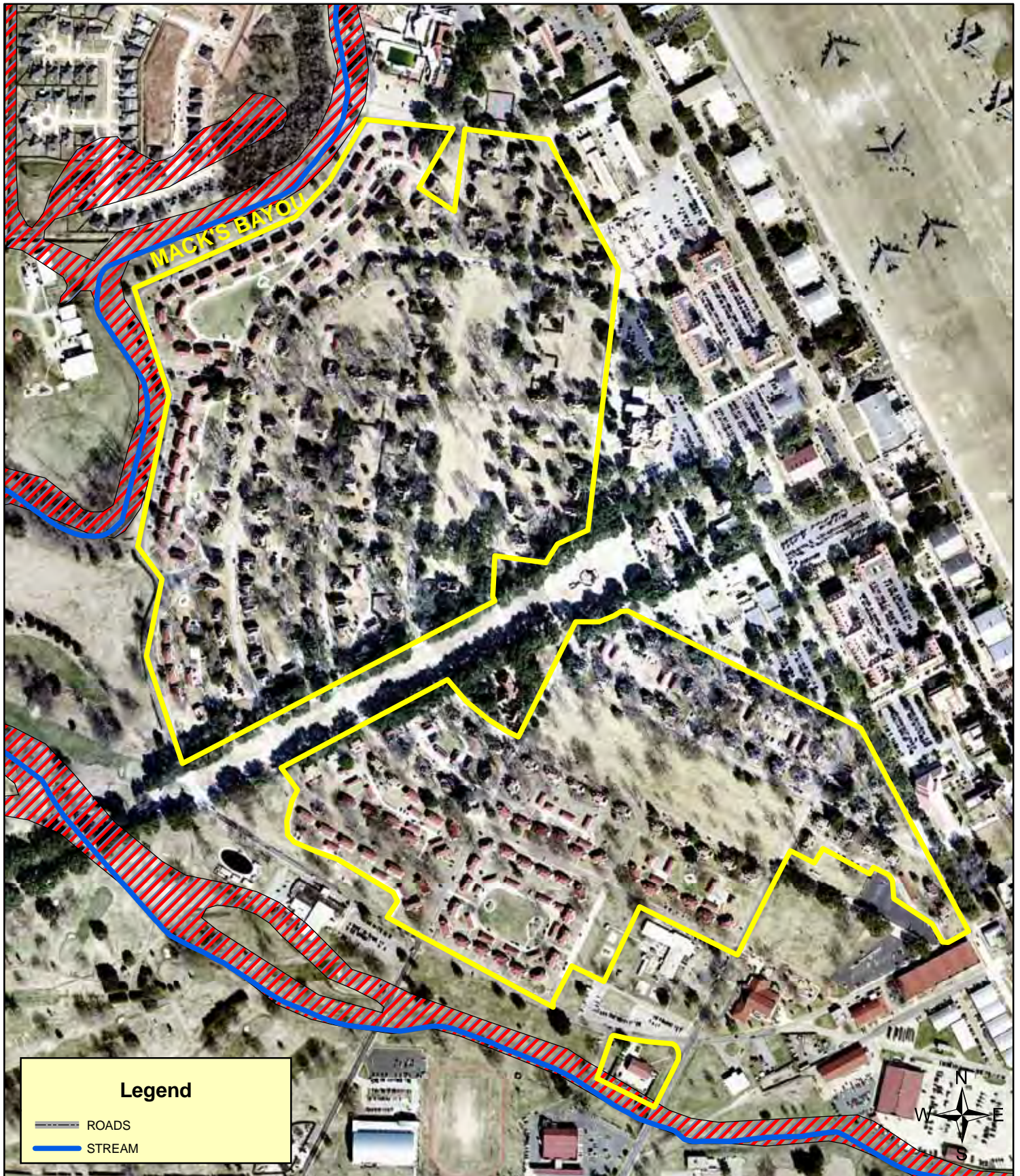
BAFB contains several areas classified as being within the 100-year floodplain. Figures 3-14 and 3-15 delineate the known 100-yr floodplains. Floodplains are a major constraint to the development of the east side of the base. Generally, the 100-year floodplain follows drainage ways, in areas with elevations less than 160 ft. MSL.

0 625 1,250 2,500 3,750 5,000  
Feet



**Figure 3-14. Location of the 100-year floodplain with respect to the East Reservation housing areas.**

*Source: Barksdale AFB Civil Engineering GIS Database.*



**Figure 3-15. Location of the 100-yr floodplain with respect to the Main Base housing area.**

Source: Barksdale AFB Civil Engineering GIS Database.

#### 3.10.4 Surface Waters and Drainage Patterns

The majority of water resources at BAFB are located on the east reservation with a total of 814 acres. Approximately 80 acres of surface waters are found on the Main Base and are primarily limited to drainage channels. Natural drainage is generally south and southwest for the western two-thirds of the base, and to the southeast for the eastern portion of the base. Beavers manipulate local hydrology, causing long-term flooding in some areas. The drainage of cantonment land areas is accomplished by overland flow to diversion structures and drainage ditches and finally to local surface streams, primarily Macks and Cooper Bayous. Flooding is a concern, particularly along major drainage routes. Those areas of the reservation that are above 160 feet are not within the 100-year floodplain.

Approximately half of BAFB lies within the Red River alluvial floodplain and is characterized by flat, slowly drained systems. Flat River and Red Chute Bayou are the two main water bodies flowing through the installation. Both Flat River and Red Chute Bayou have been channelized. The Red Chute project created a straight leveed channel that bypassed several meander bends of the bayou (Red Chute Cutoff #1 and #2). Surface waters from BAFB are directed into Red Chute Bayou or Flat River and ultimately flow into the Red River. Other streams in the Red River alluvial floodplain include Macks, Cooper, Fifi, and Musselshell Bayous. Several intermittent streams occur in the uplands. Two small, regularly flowing streams are present on the northeast portion of the base. These are unnamed tributaries to Foxskin Bayou, which is present east of the base and eventually flows into Lake Bistineau. Several naturally occurring lakes are Flag Lake (677 acres), the largest lake on the base, and Moon and Clear (oxbow lakes). Flag Lake was increased to its present day level with the construction of a water control structure at Fifi Bayou in 1959. Harmon Lake (55 acres), built in 1958, is the largest impoundment in the uplands, fed by a spring-fed creek as well as by rainfall. Water levels in these lakes and many of the east reservation water impoundments can be manipulated using water-control structures. Also, two unnamed catfish ponds and Jack's Pond are located west of the Capehart housing area. On December 12, 2005 the USACE made a jurisdictional determination of surface waters on the project area which will remain in effect until December 12, 2010. A copy of the determination is provided in Appendix A.



**Photograph 3-6.** Red Chute Bayou west of the New Heritage Heights housing area.



**Photograph 3-7.** Flag Lake just southeast of the Horse Stable area.

**Main Base.** The Main Base Housing area is well-drained and contains only ephemeral storm channels (Figure 3-16). Macks Bayou is located on the west side of the main base housing. In some places, it is immediately adjacent to housing areas. However, floodplain maps indicate that the bayou never floods residences in the Main Base Housing area. The USACE has determined that no jurisdictional surface waters will be impacted by this project.

**Capehart.** Housing areas located on the East Reservation reside on upland areas containing intermittent and ephemeral streams (Figure 3-17). Four ephemeral streams and one intermittent stream have their headwaters in the Capehart housing area, but do not actually lie within the parcel. The removal of Capehart and restoration of the area back to natural conditions will result in an improvement in the quality of surface water originating from this watershed. The USACE has determined that these streams are jurisdictional to the extent shown in Figure 3-17 and demolition activities should avoid filling any of the streams located on the site.

**Horse Stable area.** Flag Lake lies to the east of the Horse Stable area but will not be impacted by development of the housing area (Figure 3-18). Two streams were observed on the Horse Stable area. According to the USGS topographic map, an intermittent stream flows along the eastern edge of the Horse Stable area. Field observations indicate that this stream is actually ephemeral with a poorly defined channel. Most of the channel is defined by wetland vegetation, but it would be considered a stream feature. The channel becomes well defined as soon as it enters the forested area south of the parcel. The USACE has determined that the stream is jurisdictional from the point of entry into the wooded area as shown in Figure 3-18. Any activities filling the jurisdictional portion of this stream would require a Section 404 Permit and consultation with the USACE.

Another ephemeral stream flows along the south boundary of the Horse Stable area eventually joining the first stream in the south east corner of the parcel. This stream does not have a defined channel and no consistent stand of wetland vegetation. The USACE has determined that this stream is not jurisdictional.

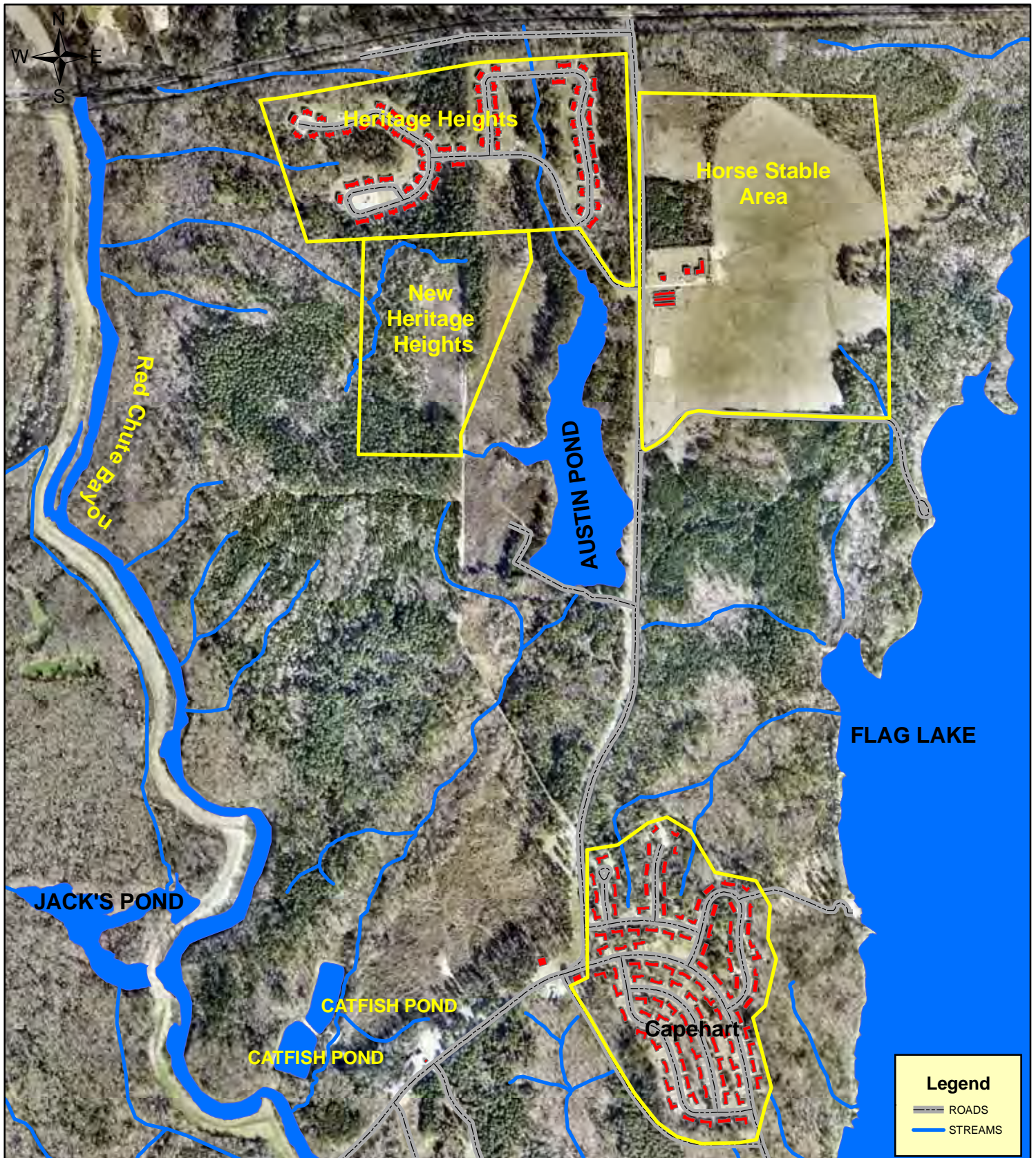
0 340 680 1,360 2,040 2,720 Feet



**Figure 3-16. Streams and other surface waters located in the vicinity of the Main Base.**

Source: Barksdale AFB Civil Engineering GIS Database.

0 600 1,200 2,400 3,600 4,800 Feet



**Figure 3-17. Streams and other surface waters located in the vicinity of the East Reservation housing areas.**

*Source: Barksdale AFB Civil Engineering GIS Database.*

**Heritage Heights.** Two intermittent streams flow from the east to the west on the west side of Heritage Heights (Figure 3-18). Another intermittent stream flows from the north to the south towards Austin Pond in Heritage Heights. Austin Pond lies south of Heritage Heights between the Horse Stable area and New Heritage Heights. However, this surface water is buffered from impacts from these communities by a forested area. The USACE has determined that these streams are jurisdictional and filling these streams would require a Section 404 Permit.

**New Heritage Heights.** Three streams were observed in the New Heritage Heights area (Figure 3-19). An ephemeral stream drains the southern portion of New Heritage Heights. The stream originates on a hillside in the south central portion of the parcel. In this segment, the stream channel is mostly defined by the presence of wetland vegetation with little or no channel development. The USACE determined that this portion of the stream was not jurisdictional. The stream eventually flows into a pond and then drains into Austin Lake through a well defined channel. The pond is a wetland dominated by sedges and rushes. The pond appears to be persistent, but is only about 18 inches deep in the middle. Both the pond and the stream were considered jurisdictional by the USACE.

An intermittent stream flows along the west edge of New Heritage Heights in a well defined channel. The stream flows into a wetland located on the northwest side of the housing area and then continues to flow west towards Red Chute Bayou. Two other ephemeral streams flow across the site and into the wetland. All of the surface waters are shown in Figure 3-19. The USACE has determined that the streams shown in Figure 3-19 are jurisdictional and would require a Section 404 permit if they were filled.

### 3.10.5 Wetlands

Jurisdictional wetlands delineated on BAFB are shown in Figure 3-19. A BNR survey shows an estimated 1,549 acres of wetland (BAFB Integrated Natural Resources Management Plan [INRMP], 2002). Like floodplains, wetlands pose a significant constraint to facility development on the east side; however, there are a number of non-conflicting uses the base can develop in these areas. In 2005, a wetland delineation was conducted for the Horse Stable area and New Heritage Heights. Only one potentially jurisdiction wetland was found within the boundaries of the proposed housing areas by this survey. A field assessment for the EA indicates the presence of a small wetland on the north side of the parcel and the pond/wetland complex on the south end. The USACE should be consulted to determine the jurisdictional status of these surface waters before construction of the site is initiated if impacts to those waters is anticipated.

Wetlands occur on BAFB primarily in the Red River alluvial floodplain. A BNR survey shows an estimated 1,549 acres of wetland (BAFB Integrated Natural Resources Management Plan [INRMP], 2002). Like floodplains, wetlands pose a significant constraint to facility development on the east side; however, there are a number of non-conflicting uses the base can develop in these areas. Typical wetlands on BAFB include:

- 1) Floodplain and other lower elevation areas where standing water is present for prolonged periods of time (>10 percent) during the growing season. Most wetlands lack both standing and waterlogged soils during at least part of the season.
- 2) Areas supporting plant communities that require standing water for at least part of the growing season.
- 3) Areas supported by inundated or saturated hydric soils.

Wetland permit applications are rigorously examined by the U.S. Army Corps of Engineers (USACE), the U.S. Environmental Protection Agency (EPA), the U.S. Fish and Wildlife Service (USFWS), and the public. Executive Order (EO) 11990, *Protection of Wetlands* directs all federal agencies, including the military, to avoid the destruction, loss or degradation of wetlands whenever there is a practical alternative.

Wetlands on BAFB are managed to protect or enhance their overall value. BNR personnel coordinate BAFB wetland actions with the USACE, and jurisdictional delineation is obtained from the USACE for all sited projects. Additionally, proposed projects are analyzed in the Environmental Impact Analysis Process (EIAP) document. Proposed actions include all practical measures to minimize impacts to wetlands; however, if impacts are unavoidable, all appropriate mitigation is negotiated, authorized, and funded if a finding-of-no-practical-alternative (FONPA) is the only alternative. BNR reviews any project that might jeopardize the integrity of BAFB wetlands. If the project does not intrude into wetlands or indirectly or directly affect or degrade wetlands, the BNR will provide a statement to that effect included in project documents. Proper Section 404 permits (nationwide, individual, etc.) are obtained if the project encompasses wetland acreage or will result in degradation of wetlands. Additionally, a FONPA (Finding of No Particular Action) is required as part of the EA if the proposed action results in the placement of fill material in wetlands.

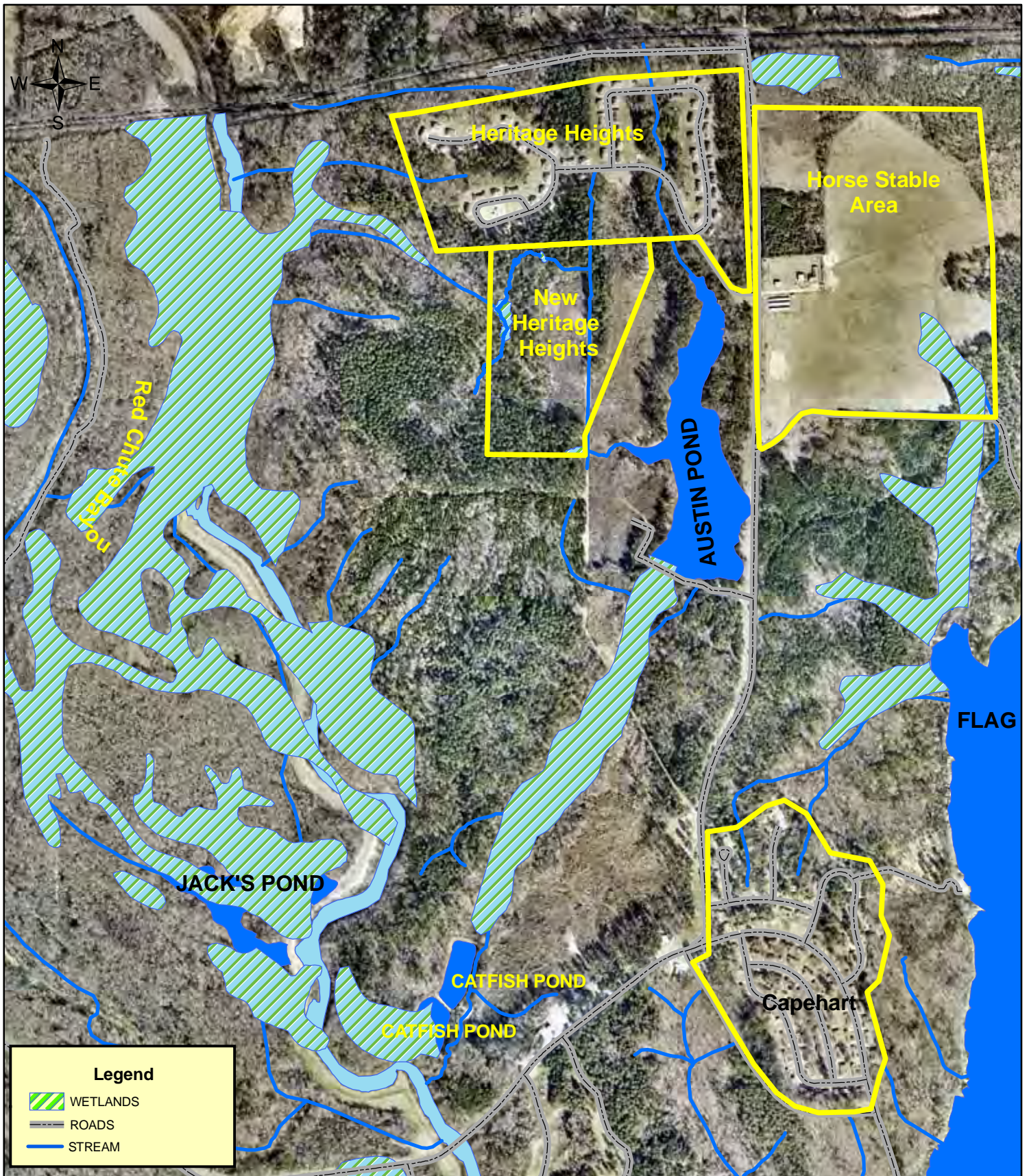
According to the most recent data collected on wetlands at BAFB (INRMP, 2002), jurisdictional wetlands are not present at Heritage Heights, Capehart, and Main Base Housing areas. As part of this EA, a preliminary field assessment was conducted and wetlands were observed adjacent to Austin Pond; however, these areas are not designated for construction activities. Figure 3-18 clearly shows presence of a mesic plant community located on the southeast corner of the Horse Stable area. However, the field survey showed that the area was a poorly drained swale containing wetland vegetation but no hydric soils and weak hydrology. The USACE determined that this area was not a jurisdictional wetland or stream.

Recently, wetlands in New Heritage Heights were assessed and delineated as part of the GIS database prepared as requested for implementation of the INRMP for BAFB. This delineation



**Photograph 3-8.** Pond 1 located on the south side of New Heritage Heights.

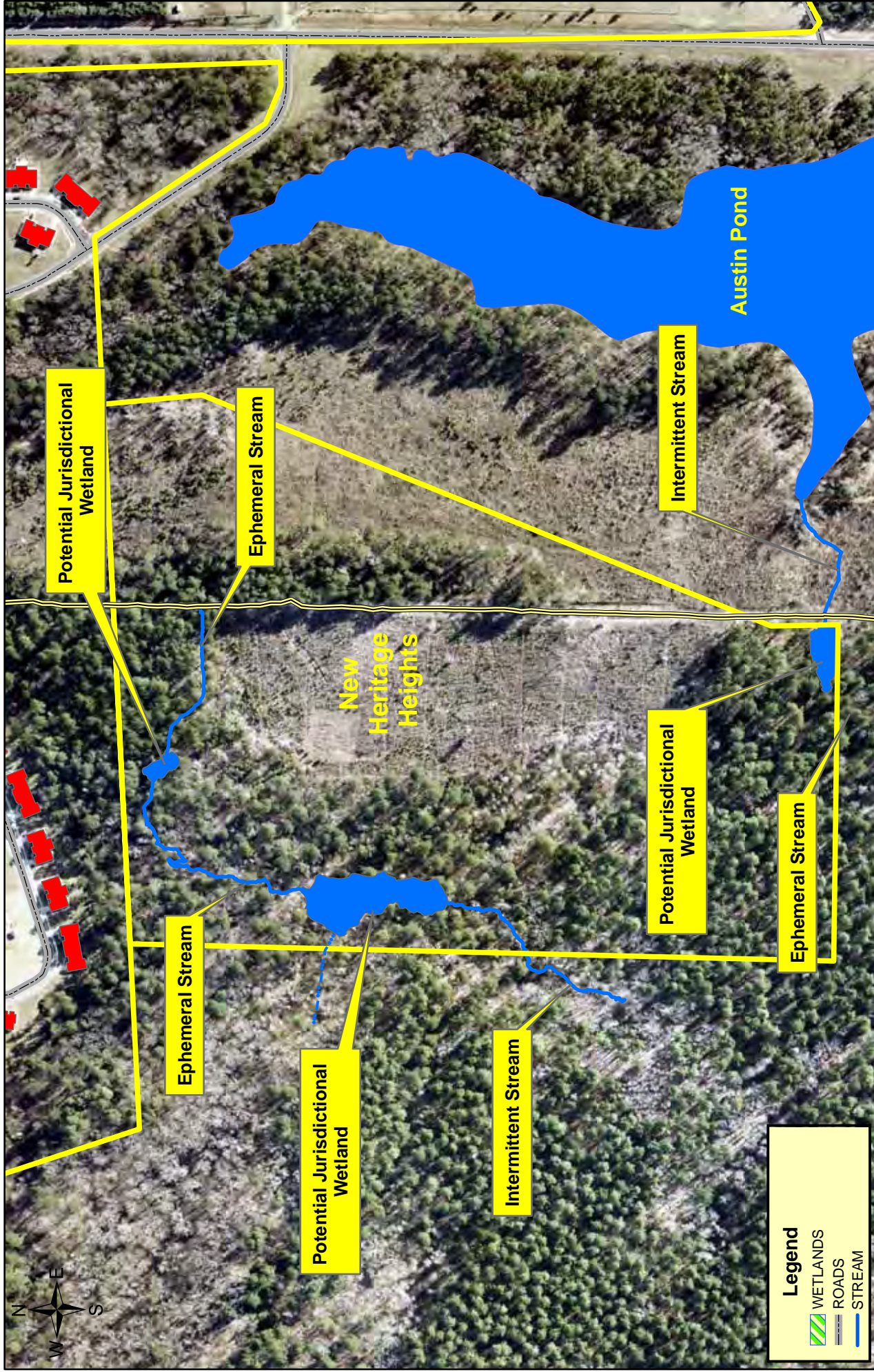
0 650 1,300 2,600 3,900 5,200 Feet



**Figure 3-18. Wetlands located in the vicinity of the East Reservation housing areas.**

*Source: Barksdale AFB Civil Engineering GIS Database.*

0 190 380 760 1,140 1,520 Feet



**Figure 3-19. Streams, wetlands, and other surface waters located in the New Heritage Heights housing areas.**

Source: Barksdale AFB Civil Engineering GIS Database.



**Photograph 3-9.** Stream 2 on the northern end of New Heritage Heights where it flows west form the parcel to Red Chute Bayou.



**Photograph 3-10.** Wetland 1 located on the northeast corner of New Heritage Heights.

indicated that a small wetland was located in the northwest corner of the housing area. The field survey conducted for this EA confirmed that a wetland was present in that area, although the boundaries were very difficult to define due to the time of the year (winter) and extensive damage caused by clearcutting activities. A smaller wetland was identified northeast of this wetland. This smaller wetland was located within a stream and apparently was formed by accumulation of water in a small depression. Another surface water is located on the south side of New Heritage Heights and is a relatively shallow surface water that supports wetland vegetation. The USACE has determined that all three of these surface waters are jurisdictional wetlands and any actions that could place fill in this wetland would require a Section 404 permit and consultation with the USACE. The location of each of these wetlands is shown in Figure 19.

### **3.11 Air Quality**

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The Clean Air Act (CAA), Title 40 CFR Parts 50 and 51, dictates that the National Ambient Air Quality Standards (NAAQS), established by the EPA, must be maintained nationwide. The NAAQS were established to protect the public health and welfare with an adequate margin of safety. The NAAQS include standards for six “criteria” pollutants: ozone (O<sub>3</sub>), nitrogen dioxide (NO<sub>2</sub>), carbon monoxide (CO), “respirable” Particulates (Particulate Matter Less than 10 Microns in Diameter [PM<sub>10</sub>]), sulfur dioxide (SO<sub>2</sub>), and lead (Pb). These standards include short-term standards (1-hour, 8-hour, or 24-hour periods) for pollutants with acute health effects, and long-term standards (annual average) for pollutants with chronic health effects.

BAFB is located in an area that is designated as attainment for criteria pollutants. BAFB is also classified as a minor source for pollutants; therefore, no special regulatory restrictions are required. There are point sources of air emissions at BAFB that generate particulate and other emissions; however, these sources comply with proposed Louisiana emissions levels. Fugitive emissions on the base are produced from fuel storage areas and emissions from road vehicles and aircraft.

LaDEQ indicated that renovation of existing structures may release asbestos and lead dust, which would be of concern to the state. Proper inspections and mitigative measures should be taken to prevent significant release of these substances. A letter from LDEQ is provided in Appendix A.

### **3.12 Noise**

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The primary generator of noise is aircraft, which affect areas of the base and adjoining land. Portions of the Main Base Housing falls within the 60 – 65 dB and the 65 – 70 dB range according to the Air Installations Compatible Use Zones (AICUZ). The base continues to work with the local community to minimize impacts through operational changes and local land use policy. These efforts have been successful in restructuring land use and military operations in ways that maintain property rights and allow mission requirements to be met.

### **3.13 Land Use**

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BAFB covers a total of 21,945 acres. Land use has not changed significantly since a previous master plan for BAFB was prepared in 1988. Primary land use is divided into three overall areas:

- 1) *The Main Cantonment area* (2,128 acres) – This includes lands west of Cooper Bayou, the airfield, Main Base industrial, administrative, community and housing facilities, and most of the urban forest.
- 2) *Barksdale East* (1,921 acres) – Barksdale East is the industrial and administrative area just east of Cooper Bayou, including Weapons Storage Area (WSA), Leadership School, Red Horse Civil Engineer Squadron, and Navy Reserve OIC Construction.
- 3) *The East Reservation* (17,896 acres) – This area, formerly known as Bossier Base, is the area east of Cooper Bayou not including the Barksdale East compound. The east reservation contains several industrial and administrative, community facilities, Capehart and Heritage Heights housing areas, Cullen and Clear Lake Parks, and oil, gas, and grazing leases. New Heritage Heights and the Horse Stable area are also located in this portion of BAFB. About 17,300 acres of the East Reservation is forest.

Improved lands encompass 1,050 acres of BAFB. Semi-improved lands cover 2,250 acres. Unimproved lands encompass 18,502 acres. Heritage Heights, Capehart, and Main Base Housing areas are currently developed improved lands. New Heritage Heights will be constructed in an area that is currently undeveloped and in use for lumber production. The Horse Stable area is currently used for horse stable and pasture. Consequently, this parcel is mostly open fields with some trees located along streams.

### 3.14 Biological Resources

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#### 3.14.1 Vegetation

Prior to settlement, the predominant ecosystem at BAFB was forest. The uplands were shortleaf, loblolly and upland hardwood forest, broken only by a few very small prairies where the soil was not suitable for tree growth. The alluvial river bottom was completely forested with bottomland hardwoods except for a few small lakes and stream courses. The landscape in the present-day boundary of BAFB was comprised of ten major plant communities including mature forests on land adjacent to the Red River, bottomland hardwood forests and cypress swamps in the Red River alluvial plain, riparian forests along upland stream bottoms, mixed hardwood-loblolly forests adjacent to and upslope from the riparian areas, hardwood slope forests on the steeper mesic slopes, shortleaf pine/oak-hickory forests and calcareous forests on the drier areas in the uplands, pine/oak-hickory flatwoods and flatwood depression hardwood forests on the upland flats. Also present in the presettlement landscape were two other terrestrial communities smaller in extent than the ones mentioned above, including wooded seeps and calcareous prairie openings. Lastly, ecotonal areas would have existed throughout the base occurring between adjacent plant communities. These areas exhibit gradients in species composition between the differing communities.

In general, vegetation at BAFB can be divided into two coarse areas – upland pine-hardwood forests to the east, and bottomland hardwood forests to the west. These areas correspond to the three physiographic units mentioned earlier, the Red River alluvial valley to the west, and to the east, terrace flatwoods, and rolling to dissected hills of the Tertiary uplands. Plant communities found today in the three major physiographic units in decreasing order of abundance:

- 1) ***Terrace flatwoods*** - loblolly pine-shortleaf pine/oak-hickory flatwoods (referred also as pine flatwoods), flatwood depressional forest, small stream forest, calcareous forest, Morse clay calcareous prairie, mixed hardwood/loblolly pine forest.

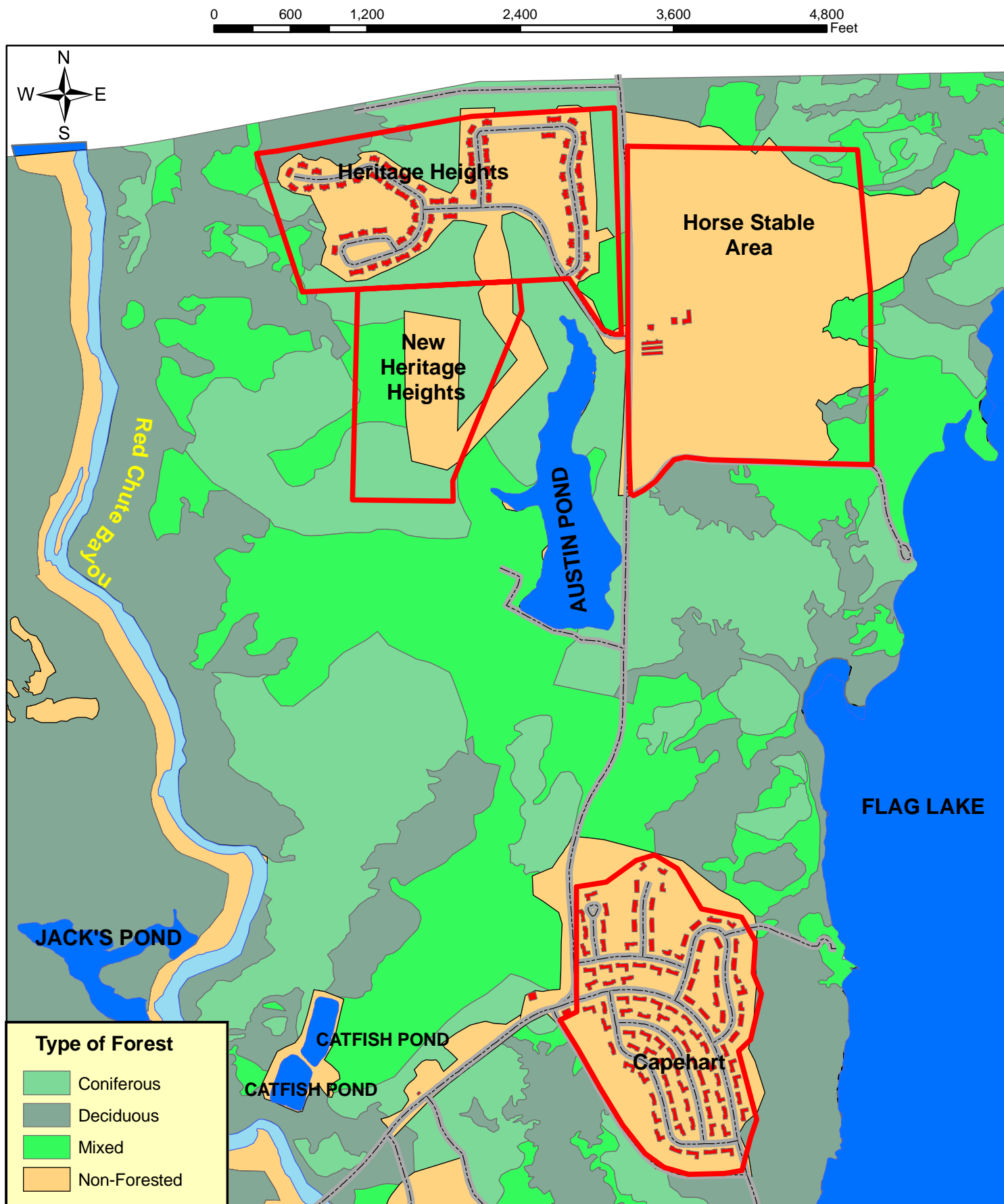
- 2) **Tertiary uplands** - loblolly pine-shortleaf pine/oak-hickory forest, shortleaf pine/oak-hickory forest, riparian or small stream forest, mixed hardwood/loblolly pine forest, and forested seeps.
- 3) **Red River alluvial floodplain** - bottomland hardwood forest

**Main Base Housing.** The main base housing area is dominated by intensively managed turf and landscaping. This plant community is comprised of a variety of shrubs and trees, both exotic and native to the region, are present on the improved areas of BAFB. The most frequently occurring urban forest species are live oak (*Quercus virginiana*), crepe-myrtle (*Lagerstroemia indica*), loblolly pine (*Pinus taeda*), pecan (*Carya illinoensis*), sweetgum (*Liquidambar styraciflua*), water oak (*Quercus nigra*), red oak (*Quercus* sp.), American elm (*Ulmus americana*), and sugarberry (*Celtis laevigata*). The majority of existing grass cover, on the improved grounds of the housing areas are St. Augustine, common Bermuda and paspalums (dallis and bahia). Semi-improved areas found in and around the main base housing is characterized by a cover of common grasses and weeds.

**Heritage Heights and Capehart.** Heritage Heights and Capehart housing areas are located in urban forest areas. Trees commonly found in the urban forest areas include live oak, crepe myrtle, loblolly pine, pecan, sweetgum, water oak, juniper, cherrybark oak, elm, and sugarberry. Urban forest areas in Heritage Heights and Capehart are shown in light blue in Figure 3-20. All of Capehart is located in urban forest. Heritage Heights lies in an area dominated by coniferous forest. A small area of upland hardwood forest is located in the northwest corner of Heritage Heights. Species common to the upland hardwood forest include cherrybark oak, Shumard oak, (*Q. shumardii*), water oak, Chinkapin oak (*Q. muehlenbergii*), swamp chestnut oak (*Q. michauxii*), white ash (*F. americana*), black hickory (*C. texana*), ironwood (*Ostrya virginiana*), eastern redcedar (*Juniperus virginiana*), redbud (*Cercis canadensis*), plums (*Prunus* spp.), hawthorns (*Crataegus* spp.), chalk maple, (*A. saccharum* var. *leucoderme*), osage-orange (*Maclura pomifera*), eastern hophornbeam (*Ostrya virginiana*), huckleberries (*Vaccinium* spp.), with some shortleaf and loblolly pine.

**New Heritage Heights.** According to Figure 3-20, portions of the New Heritage Heights contain non-forested areas. However, since this mapping was completed, a major portion of the New Heritage Heights area was clearcut. Prior to this, the site was mostly dominated by coniferous forests with upland pine-hardwood forest on the west-central portion of the parcel. Species common to the upland pine-hardwood forest include loblolly pine, shortleaf pine (*P. echinata*), post oak (*Quercus stellata*), sweetgum, southern red oak (*Q. falcata*), white oak (*Q. alba*), cherrybark oak (*Q. pagoda*), blackjack oak (*Q. marilandica*), mockernut hickory (*Carya tomentosa*), pignut hickory (*C. glabra*), blackgum (*Nyssa sylvatica*), winged elm (*Ulmus alata*), flowering dogwood (*Cornus florida*), and sassafras (*Sassafras albidum*).

A field survey was conducted to determine the general composition of the plant communities dominating the New Heritage Heights project area. This particular section of the EA will only address plant communities found in upland or drier environments. Wetland and stream communities will be discussed in the surface water section. Topography found on this parcel was rolling with relatively deep valleys and the rounded hilltops. Soils were significantly disturbed by logging activities, which left many ruts and pits that were temporarily filled with water at the time of the survey. Because the area had been previously clearcut, various woody species such as those listed above were beginning to regrow. Herbaceous vegetation was dominated by several species of bunch grasses and sedges. Some of the more common grasses included broomsedge (*Andropogon virginicus*), Scribner's panicum (*Dichanthelium oligosanthos*), Indian woodoats (*Chasmanthium latifolium*), and various species of *Eragrostis*



**Figure 3-20. Forest types located in the vicinity of the East Reservation housing areas.**

*Source: Barksdale AFB Civil Engineering GIS Database.*



**Photograph 3-11.** Vegetation typical of the New Heritage Heights housing area.

and *Muhlenbergia*. Some areas had been planted with loblolly pine, which was in various stages of growth from seedlings to heights greater than 10 ft. A hiking trail had been constructed along the east side of the area, just west of Austin pond. The plant community found between the hiking trail and Austin pond was that dominated by loblolly pine with a mixture of deciduous hardwoods in the understory. Also present were significant populations of southern dewberry (*Rubus trivialis*) and greenbriar (*Smilax spp.*).

**Horse Stable area.** The Horse Stable area is mostly open pasture dominated by sodgrasses including bermudagrass (*Cynodon dactylon*). The south east and east central portion of the property supports upland pine-hardwood forests that appear to have been planted several years ago.

### 3.14.2 Wildlife

BAFB is home to a wide variety of wildlife. With a diversity of habitats, many of the mammals, reptiles, amphibians, birds, fish and insects typical of this region are all well represented. Table 3-2 presents the more common wildlife species found on BAFB as listed in the INRMP (2002).

**Table 3-2: Principal fish and wildlife species found on BAFB.**

COMMON NAME	SCIENTIFIC NAME
<b>FISH</b>	
Largemouth Bass	<i>Micropterus salmoides</i>
Black Crappie	<i>Pomoxis nigromaculatus</i>
Bluegill	<i>Lepomis macrochirus</i>
Redear Sunfish	<i>Lepomis microlophus</i>
Channel Catfish	<i>Ictalurus punctatus</i>

COMMON NAME	SCIENTIFIC NAME
Blue Catfish	<i>Ictalurus furcatus</i>
<b>BIRDS</b>	
Eastern Wild Turkey	<i>Meleagris gallopavo silvestris</i>
Northern Bobwhite Quail	<i>Colinus virginianus</i>
Mourning Dove	<i>Zenaida macroura</i>
American Crow	<i>Corvus brachyrhynchos</i>
Mallard	<i>Anas platyrhynchos</i>
Blue-winged Teal	<i>Anas discors</i>
Gadwall	<i>Anas strepera</i>
American Widgeon	<i>Anas americana</i>
Lesser Scaup	<i>Aythya affinis</i>
Hooded Merganser	<i>Lophodytes cucullatus</i>
Wood Duck	<i>Aix sponsa</i>
Great Egret	<i>Casmerodius albus</i>
Snowy Egret	<i>Egretta thula</i>
Cattle Egret	<i>Bubulcus ibis</i>
Great Blue Heron	<i>Ardea herodias</i>
Little Blue Heron	<i>Egretta caerulea</i>
Black-crowned Night-Heron	<i>Nycticorax nycticorax</i>
Yellow-crowned Night Heron	<i>Nycticorax violaceus</i>
Green-backed Heron	<i>Butorides striatus</i>
White Ibis	<i>Eudocimus albus</i>
American Anhinga	<i>Anhinga anhinga</i>
<b>MAMMALS</b>	
White-tailed Deer	<i>Odocoileus virginianus</i>
Gray Squirrel	<i>Sciurus carolinensis</i>
Fox Squirrel	<i>Sciurus niger</i>
Cottontail Rabbit	<i>Sylvilagus floridanus</i>
Swamp Rabbit	<i>Sylvilagus aquaticus</i>
Beaver	<i>Castor canadensis</i>
Nutria	<i>Myocastor coypus</i>
River Otter	<i>Lutra canadensis</i>
Bobcat	<i>Lynx rufus</i>
Common Raccoon	<i>Procyon lotor</i>
Coyote	<i>Canis latrans</i>
<b>REPTILES/AMPHIBIANS</b>	
American Alligator	<i>Alligator mississippiensis</i>
Copperhead	<i>Agkistrodon contortrix</i>
Cottonmouth	<i>Agkistrodon piscivorus</i>
Water snakes	<i>Nerodia sp.</i>
King snakes	<i>Lampropeltis sp.</i>
Rat snakes	<i>Elaphe sp.</i>
Bullfrog	<i>Rana catesbeiana</i>

BAFB is a Category 1 installation. Category 1 installations are those that have natural resources requiring protection and management, such as critical habitat for protected species, aquatic resources, or any habitat that is suitable for conserving and managing wildlife.

The Main Base Housing area is highly developed and probably does not support significant populations of wildlife other than some of the more gregarious species that are adaptable to human activities. Interestingly, foxes have been observed on the Main Base in and around the golf course. Capehart and Heritage Heights are both developed areas surrounded by undeveloped land. Native wildlife species probably encroach on these areas on a regular basis. It is probably not uncommon for many of the species listed in table one to be observed in and around the sites. However, wildlife species that tend to be more reclusive are probably not observed on these areas.

The Horse Stable area provides a pasture environment conducive to wildlife species that enjoy open grasslands with no cover. Such an environment tends to limit wildlife species to those that are smaller in size such as small rodents, birds, and reptiles. During the field survey, a gray fox was observed on the north end of the Horse Stable area. The New Heritage Heights will be located in an area that has recently been clearcut for lumber. These areas often attract various species of wildlife due to the mixture of lush herbaceous species and young woody plants. White-tailed deer often frequent disturbed areas because of dense populations of forbs and other browse.

### **3.14.3 Endangered and Threatened Species**

Several protected species were identified by a LNC (Louisiana Nature Conservancy) survey conducted on the base (INRMP, 2002). The bald eagle (*Haliaeetus leucocephalus*) and the red-cockaded woodpecker (*Picoides borealis*) are the only federally and state listed endangered or threatened species potentially found on BAFB. At the time of this EA, no comprehensive, detailed surveys for the red cockaded woodpecker have been conducted on BAFB. Flag Lake is considered to be an important wintering area for the Bald Eagle. Those species of animals considered state-rare and monitored by the Louisiana Department of Wildlife and Fisheries (LDWF) Natural Heritage Program found include Bachman's sparrow (*Aimophila aestivalis*) and Cooper's hawk (*Accipiter cooperii*). The USFWS was contacted in late November 2004 to discuss the status of the bald eagle at BAFB (See Appendix A). The bald eagle is currently listed as threatened and are commonly found nesting in Louisiana from October through mid-May. The eagles typically nest in bald cypress trees near fresh to intermediate marshes for open water. Eagles have been known to winter and infrequently nest near large lakes in central and northern Louisiana.

Bald eagles usually returned to the same nest each year, but they may use alternate nests in the same general vicinity. They are most vulnerable to disturbance during courtship, nest building, egg laying, incubation, and brooding. Disturbance during this critical period may lead to nest abandonment, cracked and chilled eggs, and exposure of small young to the elements. Human activity near a nest late in the nesting cycle may also cause flightless birds to jump from a nest tree, reducing the chance of survival. According to the USFWS, records indicate that there are no known bald eagle nests near Flag Lake. The USFWS recommended that those areas within 1500 ft. of the proposed project sites that contain nesting habitat that should be surveyed for undocumented bald eagle nests. If any nests are observed in the vicinity of the proposed project areas, the USFWS should be notified as soon as possible. Should the proposed project or associated work activities encroached within 1,500 ft. of an eagle nest during the nesting season, further consultation with the USFWS will be required. Current

surveys for bald eagles indicate that no eagles are nesting in the vicinity of any of the projects. The eagles have been observed over wintering at Flag Lake, but roost in cypress trees distant from the project sites. Informal consultations under the Endangered Species Act, Section 7 for the Bald Eagle have been initiated with Fish and Wildlife Services, Lafayette Ecological Services Office.

The red-cockaded woodpecker is federally listed as an endangered species. This species nests in open, park-like stands of mature pine trees containing little hardwood under-story or mid-story. The red-cockaded woodpecker can tolerate small numbers of over-story hardwoods are large and mid-story hardwoods at low density found naturally in many southern pine forests, but they are not tolerant to dense hardwood mid-stories resulting from fire suppression. The two areas proposed for new construction consists of an open pasture land at the Horse Stable area. Surrounding this site are dense, young pine/hardwood mixed forests with dense undergrowth. The New Heritage Heights site was recently clear-cut and is also surrounded by clusters of dense, young pine/hardwood mixed forests with dense undergrowth. No potential habitat for the Red-cockaded Woodpecker exists within one-mile of these two sites.

The USFWS also indicated that two active colonial waterbird rookeries were located in the vicinity of the Capehart housing area. However, wildlife surveys conducted at BAFB have identified only one rookery at Jack's Pond about ½ mile west of Capehart. No other rookeries have been identified near any of the housing areas proposed for the East Reservation. The USFWS recommended that to minimize disturbance to nesting birds, all activity occurring within 1000 ft. of a rookery should be restricted to the non-nesting period or September 1 through February 15.

Native flora identified as state-rare by a LNC survey conducted on the base included Texas aster, *Aster drummondii* var. *texanus*; wild hyacinth, *Camassia scilloides*; hyaline caric sedge, *Carex hyalina*; caric sedge, *C. meadii*; stiff tickseed, *Coreopsis palmata*; white trout lily, *Erythronium albidum*; large whorled pogonia, *Isotria verticillata*; junegrass, *Koeleria macrantha*; pale umbrella-wort, *Mirabilis albida*; American pinesap, *Montotropa hypopithys*; celestial lily, *Nemastylis geminiflora*; starry campion, *Silene stellata*; meadowrue, *Thalictrum revolutum* and three-birds orchid, *Triphora trianthophora*.

### **3.15 Airspace**

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These projects will have no impact on air space and this topic will not be discussed in this EA.

### **3.16 Safety**

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All operations at BAFB are conducted with strict adherence to safety features. The project areas are located away from flight lines and should in no way impact the safety of incoming and outgoing aircraft or any flight line activities. Therefore, this issue will not be discussed in further detail in the EA.

### **3.17 Socioeconomics**

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#### **3.17.1 Economic Overview**

Agriculture, forestry, oil, gas, manufacturing, and entertainment are the major economic activities in the Shreveport-Bossier area. The area was adversely impacted by the 2001

recession, experiencing unemployment and a slower business climate. The private housing market maintained growth while commercial building growth declined and retail sales bogged down.

Shreveport serves as the focal point for the Arkansas-Louisiana-Texas region. Accessible by I-20 (east-west), I-49 (south), and U.S. 71 (north), Shreveport acts as a hub for transportation by air, highway, and rail. Dallas/Fort Worth and Houston are frequent Texas destinations. Little Rock, Arkansas and Memphis, Tennessee are favored northbound destinations, as is Jackson, Mississippi to the east. Shreveport's area of economic influence extends into southwest Arkansas, northwest Louisiana, and northeast Texas. Bossier City, whose history dates back to the Civil War period, was a major contributor to the current overland transportation system that developed in the area. Shed road was the South's original year-round turnpike.

The base-related population living in the Shreveport MSA consists of 1,937 civilian employees. and over 14,000 military personnel (active and reserve) and family members. Most military personnel with family members live off base. There are approximately 60,000 military retirees who live within a 100-mile radius, and this group uses base services such as NAF (non-appropriated funds) facilities, medical, commissary, and BX (Base Exchange).

In addition to the overall magnitude of BAFB's economic impact, its distribution among industry sectors and areas of the region is important. The adjusted payroll, including retirees, which comes directly from BAFB is substantially larger than the amount of Base purchases of supplies, equipment, and services. These expenditures have multiplier effects on the local economy. The purchase of supplies and equipment has a lesser multiplier effect, since a large portion of the purchases of supplies and equipment from vendors within the region is actually manufactured outside the region.

### 3.17.2 Local Income, Purchasing Power, and Economic Impact

The per capita income for 1999 in the Shreveport MSA was \$24,053 (Source: Metropolitan Area Personal Income and Per Capita Personal Income: 1999, BEA News Release, May 2001), while that on base was \$29,134 in 2004.

The net fiscal impact of military installations on local government is the difference between state and local revenues (taxes) paid by base-related individuals plus the "multiplier effect;" and, on the other hand, the costs imposed on local government by added public safety, education, and other local government added costs. In an economy that is as large and diverse as the Shreveport MSA, the net favorable local fiscal impact of BAFB is a significantly positive one.

The estimated total local economic impact of BAFB on the local community for 2004 was \$587.39 million (Table 3-3). Regional impacts stem from two sources: (1) purchases by the base of supplies, equipment, and services (contractual or otherwise) from businesses located within the region, and (2) local spending by households resulting from income received from employment by household members at the base.

**Table 3-3. BAFB Economic Impact (\$Million), FY 2001**

<b>ANNUAL PAYROLL:</b>			<b>\$365.99</b>
	Military	\$288.59	
	Federal Civilian	\$60.95	
	Other Civilian	\$16.46	

<b>ANNUAL EXPENDITURES:</b>			<b>\$125.83</b>
	Construction	\$7.33	
	Services	\$12.28	
	Materials, Equipment & Supplies	\$106.23	
<b>ESTIMATED ANNUAL DOLLAR VALUE OF JOBS CREATED:</b>			<b>\$95.56</b>
	Estimated Indirect Jobs Created	3,280	
	Average Annual Pay (\$Thousand)	\$29,134	
<b>TOTAL ANNUAL GROSS ECONOMIC IMPACT:</b>			<b>\$587.39</b>

FY04 Economic Impact Analysis dated 8 Feb 2002 (2 BW Public Affairs)

### 3.18 Environmental Justice

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On February 11, 1994, President Clinton issued EO 12898, *Federal Actions to Address Environmental Justice in Minority and Low-income Populations*. The purpose of the order is to avoid the disproportionate placement of adverse environmental, economic, social, or health impacts from federal actions and policies on minority and low-income populations. The first step in the process is to identify minority and low-income populations that might be affected by implementation of the Proposed Action or No Action Alternative. It is the critical step in addressing environmental justice.

The Proposed Action for this EA is located in the developed portion of BAFB and should not have any adverse affects on minority populations.

### 3.19 Utilities

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#### 3.19.1 Sanitary Sewer System

The sanitary sewer system at BAFB is generally adequate to convey wastewater from all existing sources and presently forecasted future development. The primary problem is the age of the system, which dates back to the construction of the original base in the 1930s. Similar to the other infrastructure systems, the system is reaching the end of its life cycle and major upgrades are required to maintain the system.

Improvements to the system have been implemented that address capacity and facility maintenance requirements. The BAFB wastewater system experiences problems with wet weather flows that are common to the area. To alleviate the overflow during rainfall events, a program of sewer replacement and upgrade, manhole rehabilitation and cleaning of sewers has been initiated. In the past, high levels of oil and grease have been released to the Bossier City waste water treatment plant; however, 25 recently installed and upgraded oil/water separators will alleviate this problem. The base is making a concerted effort to reduce flow from industrial processes.

Sanitary mains are owned and maintained by BAFB. The current wastewater system dates back to the original construction of the base and consists of gravity sewers, forced mains, and lift stations. Through the years the system has been upgraded and generally meets the requirements of the base. A survey of the sanitary sewer was completed in Fiscal Year (FY) 1994 as part of BAFB's program to improve the utility systems. This survey quantified inflow and infiltration problems and recommended repairs.

The system receives residential and industrial wastewater. Two primary collection systems exist: (1) the East Reservation and the runway area on the east side of the flight line and (2) the apron and Main Base. The wastewater exits the base through two lines and is pumped through the West Gate via a forced main. After leaving the base, the discharge flows to the Bossier City waste water treatment plant approximately one mile south of the West Gate. The monthly discharge for September 2005 was 3.5 million gallons which calculates to an estimated average daily discharge of 116,000 gallons at a rate of \$0.54 per 1000 gallons.

The total length of the sanitary sewer system is approximately 188,000 linear ft., constructed primarily of cast iron and polyvinyl chloride (PVC). There are approximately 78,300 linear ft. of gravity main line sewers ranging in diameter from 6 to 15 in. and approximately 64,000 linear ft. of primarily 6-in. service lines. There are approximately 330 manholes in the gravity main line sewer. The remaining approximately 46,000 linear ft. of base sewer consists of forced mains ranging in diameter from 4 to 8 in. A total of 28 lift stations are in service within the base sanitary sewer system. There are 25 oil/water separators, nine grease traps, and eight wash racks which are used to prevent discharges of contaminants such as detergents, metals, and Petroleum, Oil and Lubricants (POL) to the sanitary sewer system.

Lift stations 3455 and 4727 tie into the flow from the sanitary sewers in both the East Reservation and Barksdale East. There are no septic tanks or sanitary drain fields in the housing areas. Several housing facilities within the branch gravity flow system share sewer lines. The system is capable of handling all present and projected flows.

### **3.19.2 Water System**

Potable water is received from surface water sources via the City of Shreveport's T. L. Amiss Water Treatment Facility located on Cross Lake. At one time, the east area of BAFB relied on groundwater pumped from seven wells completed in the Wilcox-Carrizo Aquifer. None of these wells is presently in use and would require extensive maintenance and repairs to become operational again.

### **3.19.3 Water Supply**

The available water supply is adequate for the present and projected needs of BAFB. The Main Base housing water system feeds from two 500,000-gal. elevated water storage tanks. These tanks also feed the Main Base. Housing is situated in the middle of the Main Base water grid.

The existing water system at BAFB is composed of transmission lines, storage impoundments, and distribution lines constructed of primarily asbestos cement, ductile iron, cast iron, and PVC. At the present time, the system meets the water requirements of the base. The current water supply is furnished by the city of Shreveport from the surface waters of Caddo and Cross Lakes and is distributed to both the Main Base and Capehart housing area. Influent to the East Reservation is through a metering point at the North Gate.

Present distribution on-base is as follows: (1) distribution within the Main Cantonment area is through 12 to 16-in. lines, (2) water to Barksdale East is through a 12-in. line reduced to 6-in. within the facility, and (3) water to the East Reservation is through a 10-in. line. Overall base water pressure is adequate to meet base needs at the present time.

The base has a long-term agreement with the Bossier City Municipal Water System in case of loss of water pressure from the city of Shreveport. This backup system is fed through a 12-in.

main at the West Gate. There are emergency provisions to allow the base to be switched to Bossier City water if necessary.

BAFB is a water supplier under both federal and state DW regulations, PWS ID 1015022. The base performs all operations and maintenance on the water distribution system and treats water with additional chlorine and ammonia to maintain an acceptable level of free chlorine. An additional potable water line will need to be constructed to accommodate the increased number of housing units associated with this project and will tie in to the existing lines between Cullen Park and Red Chute Bridge.

#### **3.19.4 Water Storage**

Water storage on BAFB is generally adequate for water supply and firefighting purposes. Storage consists of elevated and ground storage tanks with a capacity of approximately 3 million gallons. As mentioned previously, there are two elevated water storage tanks designed to store potable water for the Main Base. The 1995 Commander's Facility Assessment indicated storage requirements are 0.35 MGD for operational usage, 0.48 MGD [2000 gal. per minute (GPM) for 4 hours] for fire usage, and 0.673 MGD for emergency usage.

The Main Base has three non-potable ground storage tanks dedicated to fire protection of large facilities along the apron and in the East Reservation area. These tanks provide water for large sprinkler or aqueous film-forming foam (AFFF) fire suppression systems located in Buildings 6214, 6604, 6626, 6825, 6850, and 7710.

The East Reservation system has two elevated tanks at the Weapons Storage Area (WSA) and one, as previously stated, at the Capehart housing area. BAFB East has two elevated tanks. Due to the water stagnation problems on Barksdale East, the distribution system has been modified. The Capehart area is fed from the Shreveport water main to the ground level tank and water is pumped, as required, to the elevated tank.

#### **3.19.5 Storm Drainage System**

The storm water drainage system is composed mainly of earthen drainage ditches, pipes, and inlets augmented by culverts and catch basins. Runoff from approximately 1000 acres of the Main Cantonment area drains into Macks Bayou and then discharges on the south central portion of the base. Drainage from the east side discharges into Flag Lake. Several southwest-trending bayous provide natural drainage paths crossing the undeveloped parts of the base.

One of the primary concerns of BAFB is the discharge of industrial and commercial chemicals and other contaminants (e.g., pesticides). To address this issue, the base has completed a Stormwater Pollution Prevention Plan to ensure that BAFB maintains compliance with the provisions of the Clean Water Act. A primary problem affecting storm drainage is overgrowth and sedimentation in drainage channels, particularly Macks Bayou.

#### **3.19.6 Natural Gas**

Natural gas service for the Main Base is provided by ARKLA Gas Company through base-owned 8-in. steel mains located near the West Gate, Bowling Center, and south of the runway. The majority of secondary distribution lines are cast iron with polyethylene inserts. The natural gas service for the area north of Wilbur Wright Road is fed through the West Gate metering point. The area south of Wilbur Wright Road is fed through the metering point at Chapel 2,

Building 4221. The highest peak demand occurs in January. There are a few central heating facilities as described above; however, the majority of buildings use their own gas-fired hot air furnaces, including all Military Family Housing (MFH) units. The east side natural gas is provided through a steel pipe located near Bodcau Road. All facilities located on the east side, except the Barksdale East facilities and Academy, are served by this feeder. The Barksdale East and non commissioned officer (NCO) Academy are fueled through a 4-in. polyethylene line running around the south end of the flightline with a metering point near the south end of the runway.

The local gas company provides natural gas to the housing areas via base-owned lines. The primary natural gas feed for Main Base housing is through the 8-inch pipe entering at the Shreveport/West Gate, and from there flows into the rest of the Main Base natural system. This system is adequate for the existing housing on the Main Base. The natural gas system for housing on the Eastern Reservation is fed from the Bodcau meter through a 2-inch steel line, which may be too small to accommodate additional housing. Therefore, a larger line may need to be run into the base (Bodcau gate), and additional lines may be necessary to support the additional housing units recommended in the Proposed Action.

### **3.19.7 Electrical System**

BAFB currently obtains its electricity from American Electric Power/Southwestern Electric Power Company (AEP/SWEPCO). The electric supply line is rated at 12.470 kV. The majority of power is provided from AEP/SWEPCO's Trichel substation to the West Gate substation; however, a smaller feed is provided from the Bodcau substation to the East Reservation and Barksdale East areas. Distribution lines are primarily underground, except for the southern end of Davis Avenue, along Lindbergh road, and all distribution feeding from the Bodcau substation.

As part of the emergency generator capacity, the base maintains 87 generators, with 29 having automatic startup capabilities. The remainder of the generators require manual startup. Two fire-use water pumps are equipped with backup diesel fuel-powered engines. The base is using approximately 50 percent of the total available power load from the Trichel and Bodcau substations based on information obtained from AEP/SWEPCO.

A concern is that adverse weather has the potential to result in a security risk. Until the base is able to tie in both the east and Main Base grids in a single loop, there is the possibility that a loss of power to either the Trichel or Bodcau substations would leave a portion of the base without power. A long-range goal is to connect the two grids together, creating a continuous loop. An added benefit of this proposed plan is that the Bodcau substation can provide limited, emergency power to critical base functions if the Trichel station loses power. Future plans are to convert the remaining overhead power lines to underground facilities within ten years. The only exception to this are some facilities located on Barksdale East and is primarily a result of the high cost, high local water table, and the remoteness of the East Reservation and other facilities from the Main Cantonment area. The distribution line serving Heritage Heights is overhead until it reaches a drop point where it converts to underground.

### **3.20 Hazardous Materials and Items of Special Concern**

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Hazardous materials are used and hazardous/solid waste is generated at BAFB. Management takes place by two means: compliance of currently used materials and wastes and remediation of sites (landfills, underground storage tanks, etc.) contaminated by past practices. BAFB has

established a strong program to deal with environmental management issues and is complying with the USAF mandate to be an environmental steward.

A Phase I Environmental Baseline Survey (EBS) for the housing privatization areas has been prepared to document the physical condition of the housing areas (EBS draft pending). The EBS provides more detailed information on potential environmental concerns from the storage, use, release, and disposal of hazardous substances and petroleum products and their derivatives. The EBS was based on information obtained through a records search, interviews, and visual inspections. The following sections highlight items relevant to the EA.

### **3.20.1 Hazardous Wastes**

BAFB is a permitted large quantity generator of hazardous wastes. The base stores hazardous waste at the Defense Reutilization and Management Office (DRMO). Solid waste management units (SWMU's) managed by BAFB include hardfills, container storage areas (90 day Central Accumulation Point), transfer areas, and waste recycling operations. None of these areas are located within the housing privatization boundaries.

Hazardous waste generated at the installation include paint-related materials, parts washer waste, waste paint, batteries, and spent solvents. There is one central accumulation storage facility located at Building 5951 (approximately 4,000 ft. southeast of Main Base Housing), where all hazardous waste is stored for less than 90 days before disposal off base at an approved facility. Much of the hazardous waste has been placed on continued use or recycled programs for pollution prevention, i.e., spent solvents, batteries, anti-freeze, bead blast media used in painting operations. Personnel at the flightline fire station and all satellite accumulation points maintain spill clean up readiness. A hazardous materials pharmacy or "hazmat" has been established and tracks and controls ordering, storage, and distribution of all hazardous materials used on BAFB.

The stables located in the Horse Stable area were constructed with beams treated with creosote. If the stables are demolished as part of this project, the beams should be removed and properly disposed of or recycled for use in other projects. If properly disposed of, timbers do not present a significant source of contamination of soil and/or groundwater.

### **3.20.2 Storage Tanks**

All regulated underground fuel storage tanks that did not meet current environmental requirements have been upgraded, replaced or removed.

### **3.20.3 Pesticides**

The BNR program adheres to guidelines set forth within the Barksdale Pest Management Plan. An aggressive use of integrated pest management practices will continue to reduce the environmental impact of the pest control program at BAFB. Integrated Pest Management (IPM) is the selection and implementation of a variety of pest control methods based on predicted economic, ecological, and sociological consequences. IPM seeks maximum use of naturally occurring pest controls, including weather, disease agents, predators, and parasites. IPM incorporates various control measures including biological, cultural, physical, mechanical, and chemical.

Continuous surveillance of the forest resources is necessary. Insect and disease damage to timber is monitored during forest management activities. Natural resource personnel conduct annual aerial surveys to monitor forest health issues. USDA Forest Service (USFS) and Louisiana Department of Agriculture and Forestry (LDAF) are consulted on a regular basis concerning pest management. The most serious pest problem is the southern pine beetle. Aerial surveillance results are used to guide ground control operations and to predict future losses. Prompt salvage and utilization of the affected trees is the preferred method of control. Proper silvicultural treatment of forest stands is the essential element in developing long-term pest management strategies that reduce timber loss.

Historically, it is likely that chlordane was applied via sub-slab injection according to manufacturer's guidelines as a termiticide in housing areas before its use was discontinued in the mid-1980s.

#### **3.20.4 Solid Waste**

Solid wastes are generated in family housing, enlisted dormitories, BX, Commissary, and other support areas. Medical waste is generated at the base hospital. Construction and demolition wastes are generated through renovation and construction activities on base. Solid wastes are recycled, mulched, composted or land filled. Data collected from the FY2000 solid waste contract shows BAFB generated approximately 11,470 tons of municipal solid waste. The family housing area generated 1,050 tons of this total. Dormitories, food service, recreation, maintenance, administration and office facilities, warehouses, and retail stores generate the remainder of the waste. Of the 11,470 tons generated by the base, 8,125 tons were recycled, mulched, composted, or donated. This has saved BAFB \$170,000 in landfill fees.

Non-hazardous solid waste is collected by contract and disposed of off base. No on-base municipal landfills are in operation, but the base does operate a construction and demolition landfill which does not require a permit. The Environmental Flight is in charge of the base-recycling program that operates an office-recycling program and a mulching operation. There is also curbside collection in the housing areas and a drop-off Center centrally located for the collection of plastic, paper, newspaper, and cardboard.

None of the sites included in the Proposed Action store, treat, or dispose of solid waste on site. Solid waste should not be an issue at any of these facilities with respect to the impact of the Proposed Action.

#### **3.20.5 Asbestos**

Asbestos is not an issue on the new site selected for the housing. This is due to the fact that no standing structure is present on the site at this time. However, asbestos-containing materials (ACMs) may be present in housing that will be eventually demolished at Capehart. These buildings should be inspected for ACMs prior to demolition. Additionally, housing units that are to be renovated may contain ACMs and should be inspected prior to renovation activities.

#### **3.20.6 Polychlorinated Biphenyls**

As previously discussed, BAFB is currently under a polychlorinated biphenyls (PCB)-free program. Thus, any new transformers, etc., are probably PCB-free. Some of the older buildings may contain transformers with PCBs. PCBs may also be present in the ballasts of older light fixtures. Any old hydraulic equipment, light ballasts, and/or transformers should be

inspected to determine if they contain PCBs. If so, these should be properly disposed of, and the area around the equipment should be sampled for PCBs that may have leaked from the equipment in the past.

### **3.20.7 Radon**

Radon is a naturally occurring, colorless, and odorless radioactive gas that is produced by the radioactive decay of naturally occurring uranium. Uranium decays to radium and then radon. Radon that is present in soil can enter a building through small spaces and openings and can accumulate in enclosed areas such as basements.

Air Force policy requires implementation of the Air Force radon assessment and mitigation program to determine levels of radon exposure to military personnel and their dependents. This program is restricted to residential structures and schools.

### **3.20.8 Lead-Based Paint**

Human exposure to lead has been determined to be an adverse health risk by both OSHA and the EPA. Common sources of exposure to lead include dust, soils, and paint. The Department of Defense (DOD) implemented a ban of lead-based paint use in 1978; however, it is possible that facilities constructed prior to or during 1978 may contain lead-based paints. Although lead-based paints are not a problem on the new housing site, they are a potential problem for existing buildings.

### **3.20.9 Environmental Restoration Program**

The objective of the USAF Environmental Restoration Program (ERP) is to assess past hazardous waste disposal and spill sites at USAF installations and to develop remedial actions consistent with the National Contingency Plan (NCP) for sites that pose a threat to human health and welfare or the environment. There are only three ERP sites that are within or immediately adjacent to the housing privatization areas. Macks Bayou (ERP Site OT-06) borders the northwest Main Base Area, Water Storage Tower 8119 (ERP Site SS-34) is immediately northeast of Capehart Housing, and Drum Disposal Area No. 2 (ERP Site DP-25) overlaps with 7 acres in the southwest corner of the Horse Stable area. All three ERP sites have been approved for No Further Action. As a result, ERP sites should not be an issue at any of these areas with respect to the impact of the Proposed Action.

### **3.20.10 Military Munitions Response Program**

The objective of the Military Munitions Response Program (MMRP) is to assess closed, transferring, and transferred military ranges. The MMRP identifies response actions that manage munitions-related ordnance or contamination in a manner that is safe and protective of human health and the environment. There are two MMRP sites that are within or immediately adjacent to the housing privatization areas. The sites are associated with World War II bombing ranges located in the East Reservation. The suspected areas associated with Flag Lake Range (MMRP Site AOC-43) overlap with a third (eastern portion) of the Horse Stable area. Remainder of East Reservation (MMRP Site MRA655) completely overlaps the Heritage Heights and New Heritage Heights housing areas. Given that the overlapping areas do not coincide with known bombing range targets and since the Heritage Heights and Horse Stable area are currently in use, the likelihood of ordnance-related contamination is low. To maximize future safety, especially since MMRP response actions have not been completed at AOC-43

and MRA655, an accelerated MMRP site inspection (including a survey for unexploded ordnance and related chemical constituents) should be performed primarily within undisturbed areas to mitigate the potential for encountering unexploded ordnance during new housing construction activities. This will provide the contractor and future housing unit dwellers with some assurances that the Air Force has validated the likelihood that no unexploded ordinances (UXO) exist in the proposed housing areas.

## **4.0 ENVIRONMENTAL CONSEQUENCES**

### **4.1 Affected Housing Areas**

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#### **4.1.1 No Action Alternative**

Under the No Action Alternative, the current housing areas will remain in place and will not be renovated. The Capehart housing area will be left in place and not demolished. New housing units will not be constructed in the Horse Stable area and New Heritage Heights. Under these circumstances, housing will continue to degrade, resulting in higher costs for repair, maintenance, and operation of the housing areas. Probably one of the greatest impacts caused by the No Action Alternative would be lower troop morale based on poor housing conditions for families.

#### **4.1.2 Proposed Action**

Housing units on the Main Base and at Heritage Heights will be renovated and improved. Additionally, new housing units will be added in the New Heritage Heights and Horse Stable area. The Capehart housing area will be demolished and no longer require maintenance and repair. Management of the housing units will be conducted by a private business decreasing costs and responsibilities for the Air Force.

#### **4.1.3 Alternative 1**

Impacts of alternative 1 on housing areas will be similar to that of the Proposed Action with the exception that management and operation of the housing areas will be conducted by the Air Force and not private businesses. This could result in a more costly operation compared to the Proposed Action.

### **4.2 Topography and Physiography**

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#### **4.2.1 No Action Alternative**

The No Action Alternative will not involve any excavation or changes impacting the earth's surface. Therefore, this action will have no impact on the geology and physiography of the project area and vicinity.

#### **4.2.2 Proposed Action**

The Proposed Action will result in some excavation, cutting, and filling of the earth's surface at the New Heritage Heights and Horse Stable area. In addition, the topography of the area around Capehart will be returned to normal contours after the housing units are demolished. All of these actions result in minor changes in topography. Changes in topography can result in changes in drainage patterns which could cause minor impacts to watersheds. Returning Capehart to its natural condition would result in a positive impact on the natural environment.

#### **4.2.3 Alternative 1**

Alternative 1 will result in the same impacts to topography and physiography as the Proposed Action.

## **4.3 Soils**

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### **4.3.1 No Action Alternative**

The No Action Alternative will have no significant impacts on soils. The only impacts that may occur from this action would be continued erosion and degradation of soils in areas denuded of vegetation by human use, such as drainage ditches, unimproved roads, playgrounds, and hiking paths. The No Action Alternative will not have a significant impact on prime or unique farmland soils.

### **4.3.2 Proposed Action**

Development of the New Heritage Heights and Horse Stable area will result in erosion and soil loss associated with excavation and construction activities. These impacts will be temporary and will cease once vegetation has covered the ground surface. Similar to the No Action Alternative, soils will continue to degrade in areas experiencing excessive use by humans. Because new housing areas are being developed in the Proposed Action, more of these degraded areas will be present and the level of cumulative impacts to soils will be higher. The proposed action will not have a significant impact on prime or unique farmland.

### **4.3.3 Alternative 1**

The impact of Alternative 1 on the soils will be the same as that of the Proposed Action.

## **4.4 Climate**

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### **4.4.1 No Action Alternative**

No impacts to climate are anticipated.

### **4.4.2 Proposed Action**

Because of the small size of this project, no impacts to climate are anticipated. However, some minor changes in microclimate may result due to removal of force cover and placement of roads and structures in the areas. This can result in slight changes in temperature due to the urban island effect. Similarly, restoration of the Capehart area would return the microclimate to lower natural temperatures and shady conditions typical of forested areas. No changes in climate would be realized at the Heritage Heights and Main Base Housing areas.

### **4.4.3 Alternative 1**

The impact of Alternative 1 on the climate will be the same as that of the Proposed Action.

## **4.5 Mineral and Energy Resources**

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### **4.5.1 No Action Alternative**

The only area potentially impacted by mineral and energy resources is the Capehart housing area. The Greystone oil lease boundaries encroach into the Capehart area and could potentially impact housing along the southern boundary. Although it is doubtful that any

exploration activities would encroach on the Capehart area, oil exploration and pumping activities could result in indirect impacts on residences.

#### **4.5.2 Proposed Action**

The Proposed Action will have no impacts on mineral and energy and resources. In addition, because the Capehart housing area will be demolished and restored to natural conditions, no impacts from the oil lease will be realized.

#### **4.5.3 Alternative 1**

The impact of Alternative 1 on the mineral and energy resources will be the same as that of the Proposed Action.

### **4.6 Visual Resources**

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#### **4.6.1 No Action Alternative**

The No Action Alternative will result in no impacts or changes to visual resources.

#### **4.6.2 Proposed Action**

Renovation of housing units in the Heritage Heights and Main Base Housing areas will positively impact the overall appearance of the development. In addition, renovation of the historic structures in the Main Base Housing area will result in improvements to the historic vernacular of that area. Construction of the Horse Stable area will negatively impact the rural landscape of that area. Similarly, construction of New Heritage Heights will negatively impact the natural landscape of that area. However, demolition of Capehart and restoration of the natural environment in that area will positively impact visual resources.

#### **4.6.3 Alternative 1**

The impact of Alternative 1 on the visual resources will be the same as that of the Proposed Action.

### **4.7 Cultural Resources**

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#### **4.7.1 No Action Alternative**

The No Action Alternative will have no impact on cultural resources.

#### **4.7.2 Proposed Action**

The Proposed Action will have no significant impacts on cultural resources. Two historic sites and one historic/prehistoric site are located adjacent to the Horse Stable area. However, these sites are ineligible for the NHRP. Therefore, if construction does impact them, no adverse impacts will occur. Renovation of housing units located in the historic district will improve their appearance and ensure preservation of this cultural resource.

### **4.7.3 Alternative 1**

The impact of Alternative 1 on the cultural resources will be the same as that of the Proposed Action.

## **4.8 Natural Areas**

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### **4.8.1 No Action Alternative**

The No Action Alternative will have no significant impacts on natural areas. Two natural areas are located adjacent to the Capehart housing area and could potentially be impacted by the close proximity of human activities.

### **4.8.2 Proposed Action**

The Proposed Action will also have no significant impacts on natural areas. The Horse Stable area is adjacent to the Calcareous Prairies Natural Area and in close proximity to the Nutmeg Woods Natural Area. Development of the Horse Stable area may cause some minor impacts to these natural areas due to the close proximity to human activities. Demolition of Capehart and restoration of the natural environment in that area will result in positive impacts to the Austin Pond NA and East Reservation Housing area.

### **4.8.3 Alternative 1**

The impact of Alternative 1 on the natural areas will be the same as that of the Proposed Action.

## **4.9 Water Resources**

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### **4.9.1 No Action Alternative**

The No Action Alternative will not have any significant impacts on water resources in the area. Stormwater originating from developed areas such as Heritage Heights, Main Base, and Capehart housing areas will continue to impart negative impacts to surface water features in the area. Because the New Heritage Heights and the Horse Stable area will not be developed, natural vegetation in these areas will continue to protect and filter surface water originating from this area. Stormwater originating from Heritage Heights could also negatively impact water quality at Red Chute Bayou and Austin Pond. Surface water originating in Capehart could negatively impact water quality in Flag Lake. No significant impacts to wetlands are anticipated.

### **4.9.2 Proposed Action**

The Proposed Action will impact surface waters in a manner similar to the No Action Alternative. However, Capehart will be demolished and restored to the natural conditions which will result in an improvement of water draining from that area into Flag Lake and other surface waters. Construction of the New Heritage Heights and the Horse Stable area will temporarily increase settlement loads into surface waters in the surrounding area even when Best Management Practices (BMPs) are used. Additionally, surface water originating from these housing areas will have the potential to negatively impact Flag Lake, Austin Pond, and Red Chute Bayou. No significant impacts to wetlands are anticipated. Small wetlands are located in the New Heritage Heights area, but the design of the development will avoid impacts to those wetlands.

#### **4.9.3 Alternative 1**

The impact of Alternative 1 on surface waters will be the same as that of the Proposed Action.

### **4.10 Air Quality**

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#### **4.10.1 No Action Alternative**

The No Action alternative is not expected to impact the quality of air at BAFB.

#### **4.10.2 Proposed Action**

The Proposed Action is not expected to negatively impact the quality of air at BAFB. Slight increases in particulate matter may occur during construction, but this can be minimized by BMPs.

#### **4.10.3 Alternative 1**

The impact of Alternative 1 on air quality will be the same as that of the Proposed Action.

### **4.11 Noise**

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#### **4.10.1 No Action Alternative**

The No Action Alternative is not expected to impact the noise levels at BAFB.

#### **4.11.2 Proposed Action**

The Proposed Action is not expected to impact noise levels at BAFB. However, construction and demolition activities will temporarily increase noise levels to some degree.

#### **4.11.3 Alternative 1**

The impact of Alternative 1 on noise will be the same as that of the Proposed Action.

### **4.12 Land Use**

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#### **4.12.1 No Action Alternative**

The No Action Alternative will not impact land use on the project sites or on adjacent properties.

#### **4.12.2 Proposed Action**

The Proposed Action will result in some changes in land use. Capehart will be changed from a housing area to a natural plant community. New Heritage Heights will be changed from a clearcut natural forest to a housing area. The Horse Stable area will be changed from stables and pasture to a housing area.

### **4.12.3 Alternative 1**

The impact of Alternative 1 on land use will be the same as that of the Proposed Action.

## **4.13 Biological Resources**

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### **4.13.1 No Action Alternative**

The No Action Alternative will not impact flora, fauna or endangered species.

### **4.13.2 Proposed Action**

The Proposed Action will not significantly impact flora, fauna or endangered species. Development of the New Heritage Heights and Horse Stable area will permanently change vegetation from pasture and forest to urban forest. This, in turn, will result in a change in the species composition of wildlife in that area. Wildlife not adapted to human activities will probably move from these areas to adjacent undeveloped areas. The Proposed Action is not expected to impact bald eagles due to the fact that the eagles reside in an area greater than 1500 ft. from the project site. Additionally, the Proposed Action will not impact the red-cockaded woodpecker due to the fact that this species has not been observed in or near the project. Care should be taken to monitor construction sites for endangered plants. If any of these species are observed, the natural resource manager should be contacted.

The construction of the two new housing developments will result in the displacement of wildlife from the impacted areas to adjacent areas. Field observations indicate that wildlife populations are not dense on the proposed area, which has already been impacted by clearcutting and animal husbandry activities. The surrounding undeveloped areas are extensive and should easily accommodate these wildlife populations. Encroachment of predators, poisonous insects, and snakes on the newly developed areas may occur for a short period of time after construction. Proper precautions should be made to address potential threats to humans and domesticated animals. Protection of housing units with insecticides will minimize any problems with insects. Families living in the new developments should be provided with literature and other educational information identifying the potential dangers of snakes and predators in the area and how to properly avoid problems with these nuisances.

Restoration of Capehart to natural conditions will provide additional habitat for wildlife and plant communities. As the new plant community matures through plant succession, wildlife diversity may increase due to the diversity in habitat and the presence of the contents between the new plant community and more mature adjacent plant communities.

### **4.13.3 Alternative 1**

The impact of Alternative 1 on biological resources will be the same as that of the Proposed Action.

## **4.14 Airspace**

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### **4.14.1 No Action Alternative**

The No Action Alternative will not have an impact on airspace.

#### **4.14.2 Proposed Action**

The Proposed Action does not involve construction of any structures that could infringe on airspace; therefore, no impacts to airspace are anticipated.

#### **4.14.3 Alternative 1**

The impact of Alternative 1 on airspace will be the same as that of the Proposed Action.

### **4.15 Safety**

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#### **4.15.1 No Action Alternative**

No impacts to safety are anticipated as a result of the No Action Alternative.

#### **4.15.2 Proposed Action**

No impacts to safety are anticipated by the Proposed Action.

#### **4.15.3 Alternative 1**

The impact of Alternative 1 on safety will be the same as that of the Proposed Action.

### **4.16 Socioeconomics**

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#### **4.16.1 No Action Alternative**

The No Action Alternative could potentially result in marginal negative impacts on socioeconomics. Lack of adequate and well-maintained housing at BAFB could result in a decrease in the resident population at BAFB. This, in turn, could result in a slight decrease in the overall gross economy of the area.

#### **4.16.2 Proposed Action**

In the short term, the Proposed Action would provide job opportunities for both non-professional and professional contractors and subcontractors involved in construction and demolition activities. Also, privatization of housing would provide additional employment opportunities in the private sector for maintenance and operation of the housing areas. Lastly, privatization could potentially result in a decrease in costs to the Air Force for maintenance and operation of housing areas.

#### **4.16.3 Alternative 1**

The impact of Alternative 1 on socioeconomics will be the same as that of the Proposed Action. However, the Air Force would continue maintenance and operation of housing resulting in fewer opportunities for employment in the private sector and potentially higher costs to the Air Force.

## **4.17 Environmental Justice**

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### **4.17.1 No Action Alternative**

No impacts concerning environmental justice are anticipated as a result of the No Action Alternative.

### **4.17.2 Proposed Action**

No impacts concerning environmental justice are anticipated as a result of the Proposed Action.

### **4.17.3 Alternative 1**

No impacts concerning environmental justice are anticipated as a result of Alternative 1.

## **4.18 Utilities**

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### **4.18.1 No Action Alternative**

No impacts to electric utilities, water, wastewater or natural gas use are expected as a result of the No Action Alternative.

### **4.18.2 Proposed Action**

The Proposed Action may result in slight increases in the use of utilities. This will be due to the fact that a greater number of people and number of houses will be present. However, the increase in utility usage will not exceed the capacity of present services.

### **4.18.3 Alternative 1**

The impact of Alternative 1 on utilities will be the same as that of the Proposed Action.

## **4.19 Hazardous Waste and Items of Special Concern**

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### **4.19.1 No Action Alternative**

**Hazardous and Petroleum Materials and Wastes.** The No Action Alternative should have no impacts to the current production or storage of hazardous materials and wastes. However, some hazardous wastes may be generated during construction. These materials must be disposed of properly.

**Storage Tanks.** No impacts to storage tanks are anticipated.

**Pesticides.** No impacts to pesticide use are anticipated. Some of the older housing units may have been treated with chlordane in the past and residues may still be present. Housing units known to have been treated with chlordane should be checked for residues, especially in housing units being renovated.

**Solid Waste.** No impacts to solid waste production are anticipated.

**Asbestos.** No impacts involving asbestos issues are anticipated. Asbestos abatement may be required for some of the older houses.

**Polychlorinated Biphenyls.** No impacts or releases of polychlorinated biphenyls are anticipated as a result of the No Action alternative.

**Radon.** No impacts involving radon are anticipated.

**Lead-based Paints.** No impacts from lead-based paints are anticipated. Lead-based paints could be present in some of the older houses and should be removed.

**Environmental Restoration Program Sites.** No impacts involving ERP sites are anticipated.

**Military Munitions Response Program Sites.** No impacts from MMRP sites are anticipated.

#### **4.19.2 Proposed Action**

**Hazardous and Petroleum Materials and Wastes.** Proposed action does not involve the production or storage of significant quantities of hazardous or petroleum materials and wastes.

**Storage Tanks.** The Proposed Action does not involve construction, demolition or use of above ground or underground storage tanks. Therefore, no impacts are anticipated.

**Pesticides.** The Proposed Action is not expected to result in a significant change in the use of pesticides at BAFB. Therefore, no impacts to pest management or pesticide use are anticipated. However, some of the older housing units may have been treated with chlordane in the past and residues of the pesticide may be present in and around the foundation. The soils under the older houses should be analyzed for residues of chlordane prior to demolition. Additionally, older housing units that are renovated should be checked for chlordane residues in floor boards, etc.

**Solid Waste.** A short-term increase in solid waste production would be expected during the demolition of Capehart and construction of New Heritage Heights and Horse Stable area. Some increase in solid waste would also be anticipated after construction due to an increase in the population of residents.

**Asbestos.** Demolition of Capehart and renovation of Main Base housing could result in the discovery and release of asbestos containing materials. Prior to renovating or demolishing a structure, an inspection of the building by personnel accredited by the State of Louisiana must be performed. If asbestos is found, there are notifications that must be completed and submitted to LaDEQ prior to demolition or renovation of the structures. However, with proper mitigative actions, this would be minimal and considered no impact.

**Polychlorinated Biphenyls.** No impacts or releases of polychlorinated biphenyls are anticipated as a result of the Proposed Action.

**Radon.** No impacts associated with radon are anticipated as a result of the Proposed Action.

**Lead-based Paints.** Renovation of older houses may reveal lead-based paints that were used in the past. No impacts from these paints would be expected when they are properly mitigated according to standard protocol.

**Environmental Restoration Program Sites.** No impacts involving ERP sites are anticipated.

**Military Munitions Response Program Sites.** Construction activities at New Heritage Heights and Horse Stable area may expose unexploded ordnance (UXO) associated with the former bombing ranges. No impacts from the MMRP sites would be expected if an MMRP Site Inspection is conducted prior to construction.

#### **4.19.3 Alternative 1**

The impact of Alternative 1 on hazardous waste and other similar issues will be the same as that of the Proposed Action.

#### **4.20 Cumulative Impacts**

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Cumulative impacts are impacts on the environment that result from incremental impacts that occurred in the past, present or reasonable foreseeable future. Cumulative impacts may also include similar impacts occurring in a location that is relatively close to the project area. An impact may be insignificant or small individually, but may be significant when added to several other similar or related impacts.

The Proposed Action, Alternative 1, and the No Action Alternative will not result in significant cumulative impacts to the environment.

#### **4.21 Unavoidable Adverse Impacts**

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No unavoidable adverse impacts are expected from the implementation of the Proposed Action, Alternative 1, or the No Action Alternative.

#### **4.22 Irreversible and Irretrievable Commitment Of Resources**

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An irreversible and irretrievable commitment of resources is those commitments that cannot be reversed over a long period of time or result in the loss of production or use of a renewable resource. The Proposed Action, Alternative 1, and the No Action alternative will not result in an irreversible or irretrievable commitment of natural resources. However, the proposed action will result in a positive commitment of resources with respect to Socioeconomics. The project will impact the local economy through job creation and purchase of goods and services. The Air Force will see significant cost savings over time. The No Action Alternative and Alternative 1 will not provide these resources to the community and could be considered as an irreversible commitment of those resources.

#### **4.23 Relationship Between Short-Term Uses Of The Human Environment And Maintenance Of Long-Term Productivity**

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Actions that improve the overall health and conditions of the environment result in an improvement in the long-term productivity of the natural resources. Although some negative impacts will be realized by the environment relative to the Proposed Action and Alternative 1, the overall result on a long-term basis will be positive for the growth and productivity of BAFB.

## 4.24 Mitigation

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In general, the Proposed Action will pose only minimal impacts to the environment. In fact, these impacts are slightly less than those expected to be imposed by the No Action Alternative. However, certain mitigative measures that will further decrease the impacts of the Proposed Action on the environment should be taken. A list of these measures follows:

- **Soils – Plant Growth:** Impacts of construction on removal of the topsoil can be minimized by stockpiling the top six inches of soil separate from deeper soils. Upon completion of construction and excavation, areas should be back-filled with deep soils and the topsoil added as the final layer. This returns more fertile soils to the surface and also populates the upper soil with an endemic population of seeds. The soils should then also be planted or seeded with native plants and watered for a short period of time to initiate growth.
- **Soils – Wind Erosion:** During construction, soils will be exposed to wind erosion, causing moderate production of dust in the immediate area. This can be minimized by maintaining a moist soil surface during construction. Further, the area should be planted as soon as possible to provide vegetative cover. Other mitigative measures could include using wind breaks or similar barriers to decrease the impact of wind on exposed soils and covering unvegetated areas with gravel, asphalt, concrete, or similar materials.
- **Soils – Water Erosion:** Exposed soils during construction could be susceptible to water erosion following major storm events. The housing areas are located in a relatively level area, and water erosion would probably not be a major factor. However, use of BMPs, such as silt fences and hay bales, could decrease soil erosion and pollution of local streambeds with sediments from the project site.
- **Biological Resources – Vegetation:** Impacts to vegetation can be off-set by proper landscaping using native plants. Plant species should be carefully selected for visual aesthetic value as well as potential habitat for birds and other gregarious wildlife species. Vegetation planted at Capehart should be carefully monitored for 5 years to ensure that the desirable species are able to dominate the plant community and invasive species are controlled.
- **Biological Resources – Wildlife:** Displacement of wildlife cannot really be avoided during construction of New Heritage Heights and Horse Stable area. However, the restoration of the area now supporting Capehart will off-set losses of habitat caused by these new housing areas.
- **Hazardous Materials and Items of Special Concern – Asbestos:** Potential impacts from the release of asbestos during demolition or renovation activities will be completely avoided by surveying the buildings for asbestos and properly removing asbestos prior to demolition as dictated by federal asbestos abatement regulations.
- **Hazardous Materials and Items of Special Concern – Lead-Based Paint:** Potential impacts from the release of lead-based paint during demolition and renovation can be minimized by identification of areas covered with the paint and ensuring that these materials are removed carefully and transported to a licensed facility for disposal.
- **Hazardous Materials and Items of Special Concern – Military Munitions Response Sites:** Potential impacts from encountering UXO during construction activities in the new housing areas can be minimized by performing a MMRP Site Inspection prior to construction.

## 5.0 REFERENCES

### 5.1 Regulations, Laws, and Orders

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\_\_\_\_\_. 92-205. 1973. Endangered Species Act.

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\_\_\_\_\_. 100-4. 1987. Water Quality Act.

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## **5.2 Other References**

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BAFB. 2003. Integrated Natural Resource Management Plan for Barksdale Air Force Base.

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BAFB. 2003. BAFB Housing Requirements and Marketing Analysis.

BAFB. 2004. Economic Impact Analysis for Barksdale AFB, FY 2004.

## **6.0 LIST OF PREPARERS**

Kitchen, Ph.D., Lynn M., Senior Environmental Scientist, FPM Group, Ltd.

Timothy W. Walsh, 2 CES/MFHPI

Gaby A. Atik, P.E., FPM Project Manager

## **7.0 LIST OF AGENCIES, ORGANIZATIONS, AND PERSONS CONSULTED**

### **Provided Comments:**

---

Chuck Carr Brown, Ph.D. Assistant Secretary, Louisiana Department of Environmental Quality.  
Baton Rouge, LA.

Russel C. Watson. Supervisor, Louisiana Field Office. U.S. Fish and Wildlife Service.  
Lafayette, LA

Rick Adams. District Conservationist. Natural Resource Conservation Service. Benton, LA

Marc J. Bordelon. Soil Scientist/Party Leader. Ringgold Soil Survey. Ringgold, LA.

Jack Culpepper. U.S. Fish and Wildlife Service Biologist Louisiana Ecological Services Office  
Lafayette, Louisiana

### **Contacted:**

---

Colonel Anthony C. Vesay. U.S. Army Corps of Engineers. Vicksburg District.

Ms. Jill Kelly. The Louisiana Department of Wildlife and Fisheries. Baton Rouge, LA

Mr. Richard Greene. Regional Administrator. U.S. Environmental Protection Agency, Region 6  
Dallas, TX

Tom Griggs. Engineering Manager. Louisiana Department of Environmental Quality. Office of  
Environmental Services, Permit Division. Baton Rouge, LA

# **Appendix A**

## **Letters from Regulatory Agencies**



## DEPARTMENT OF THE ARMY

VICKSBURG DISTRICT, CORPS OF ENGINEERS

4155 CLAY STREET

VICKSBURG, MISSISSIPPI 39183-3435

REPLY TO

ATTENTION OF:

December 12, 2005

Operations Division  
Regulatory

SUBJECT: Jurisdictional Determination -Housing Privatization at  
Barksdale Air Force Base, Louisiana

Mr. Timothy W. Walsh, Jr.  
Department of the Air Force  
2 CES/MFHPI  
334 Davis Avenue W, Suite 200  
Barksdale Air Force Base, Louisiana 71110-2078

Dear Mr. Walsh:

I refer to your letter requesting comments for the proposed housing projects (Main Base Housing, Capehart, Heritage Heights, New Heritage Heights and Horse Stable Area) located in section 35, T18N-R13W, sections 21, 22, 27, 28 and 34, T18N-R12W, Bossier Parish, Louisiana.

Based upon the information provided, we have determined that there are wetlands and other waters of the United States located on the properties subject to regulation pursuant to Section 404 of the Clean Water Act. The approximate extent of jurisdictional waters of the United States within the boundary of the properties described in your letter is depicted on the enclosed maps (enclosure 1). For your information, I have enclosed a copy of the basis of our determination (enclosure 2) and appeals form (enclosure 3).

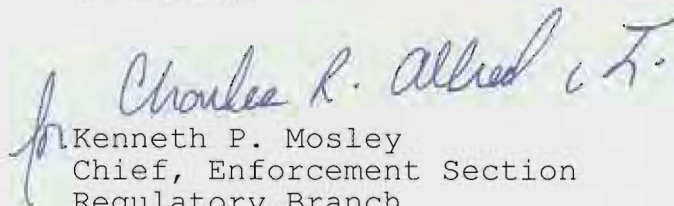
For your convenience, I am enclosing a Department of the Army permit application package with instructions (enclosure 4). Your application for any proposed work in the identified jurisdictional areas should be submitted to this office at least 120 days in advance of the proposed starting date. To expedite the evaluation process, please refer to No. MVK-2004-1494 when submitting the application.

This approved jurisdictional determination is valid for a period not to exceed 5 years from the date of this letter unless superseded by law, regulation, or policy change.

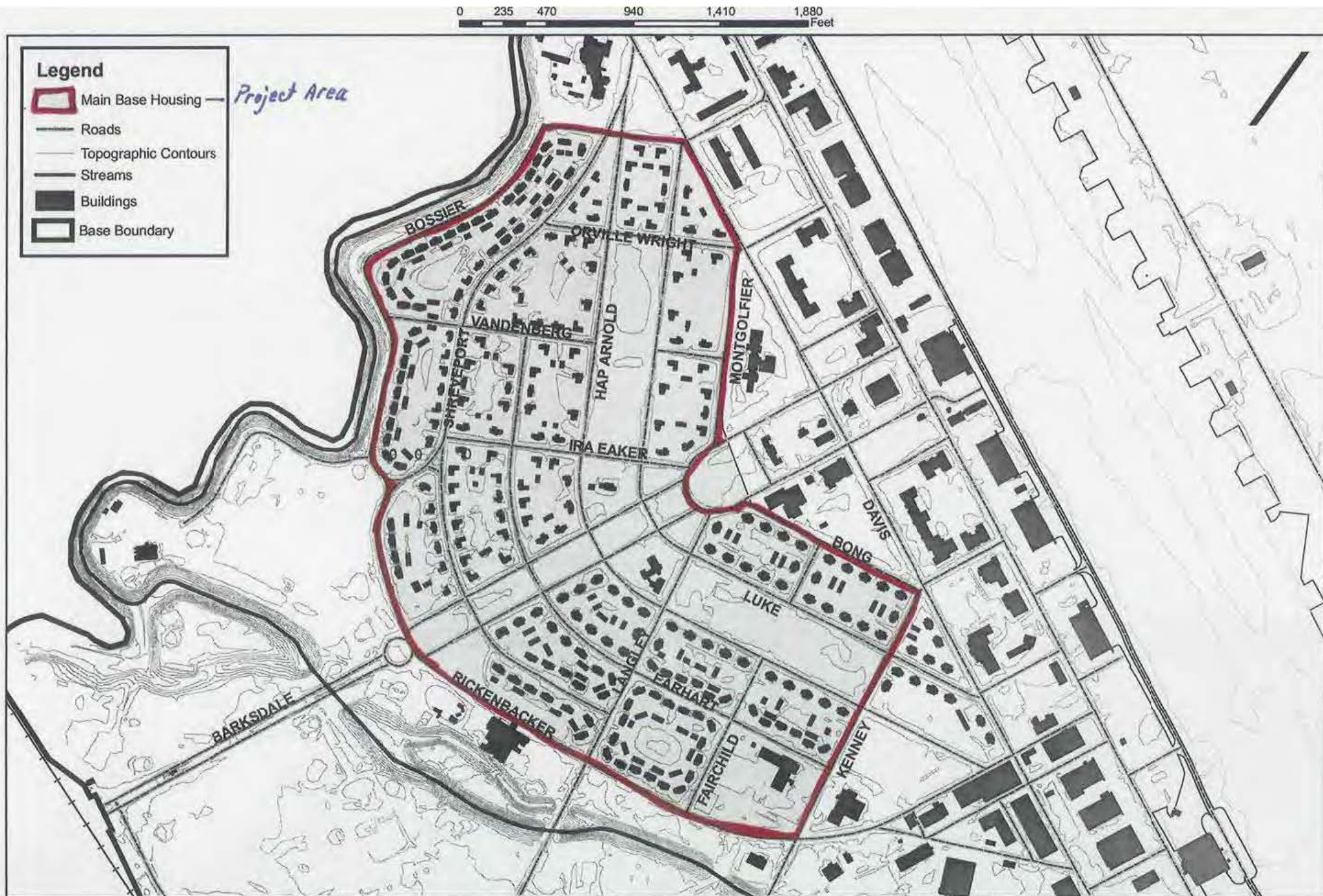
The decision regarding this action is based on information found in the administrative record, which documents the District's decision-making process, the basis for the decision, and the final decision.

If we may be of any further assistance in this matter, please contact Mr. Charles R. Allred, Jr. of this office, telephone (601) 631-5546, fax (601) 631-5459 or e-mail address: regulatory@mvk02.usace.army.mil.

Sincerely,

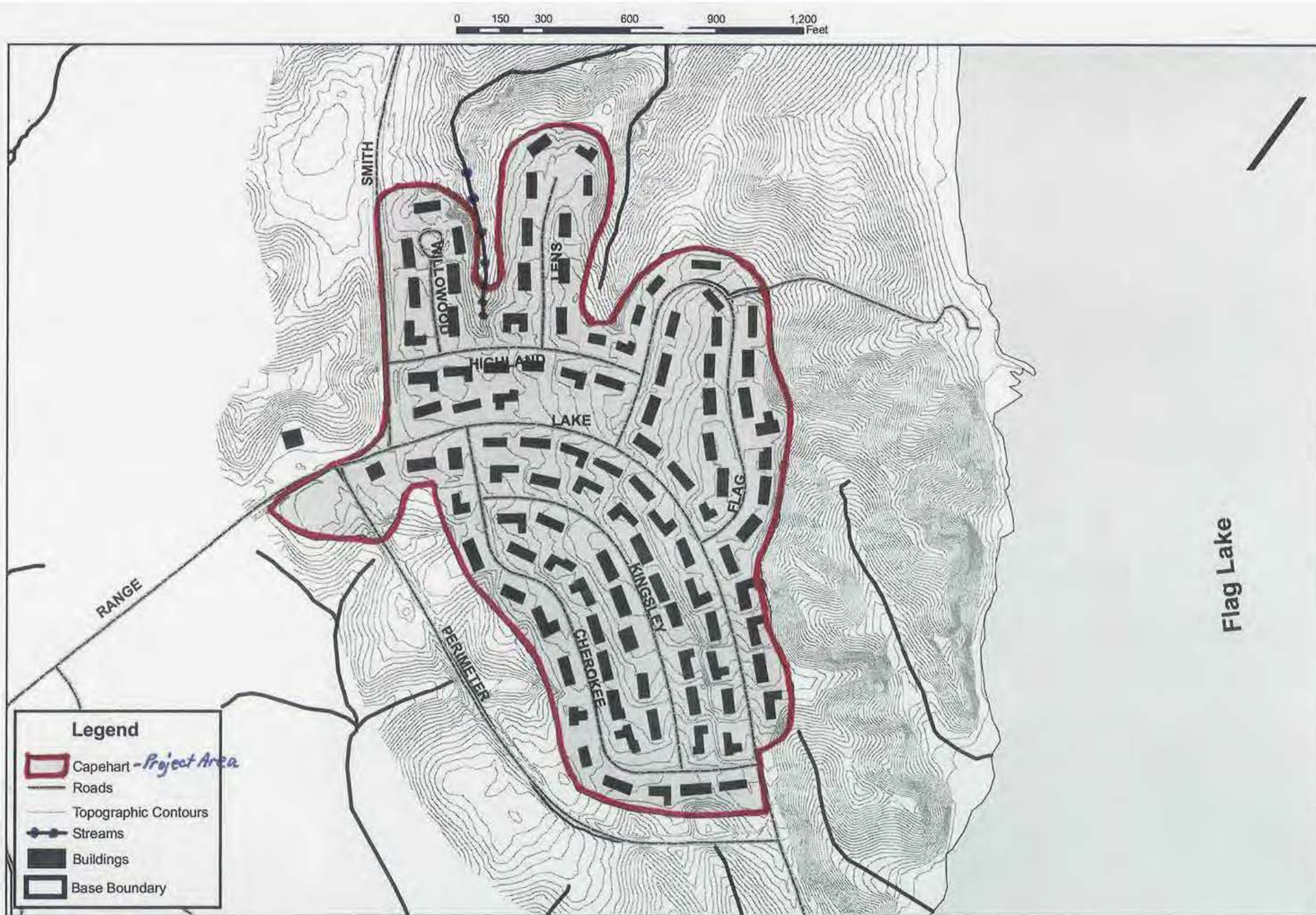
  
for Kenneth P. Mosley  
Chief, Enforcement Section  
Regulatory Branch

Enclosures



**Figure 3. Barksdale AFB Site Map showing the Main Base Housing Area.**

Source: Barksdale AFB Civil Engineering GIS Database.



**Figure 7. Barksdale AFB site map showing the location of the Capehart residential housing area.**

Source: Barksdale AFB Civil Engineering GIS Database.

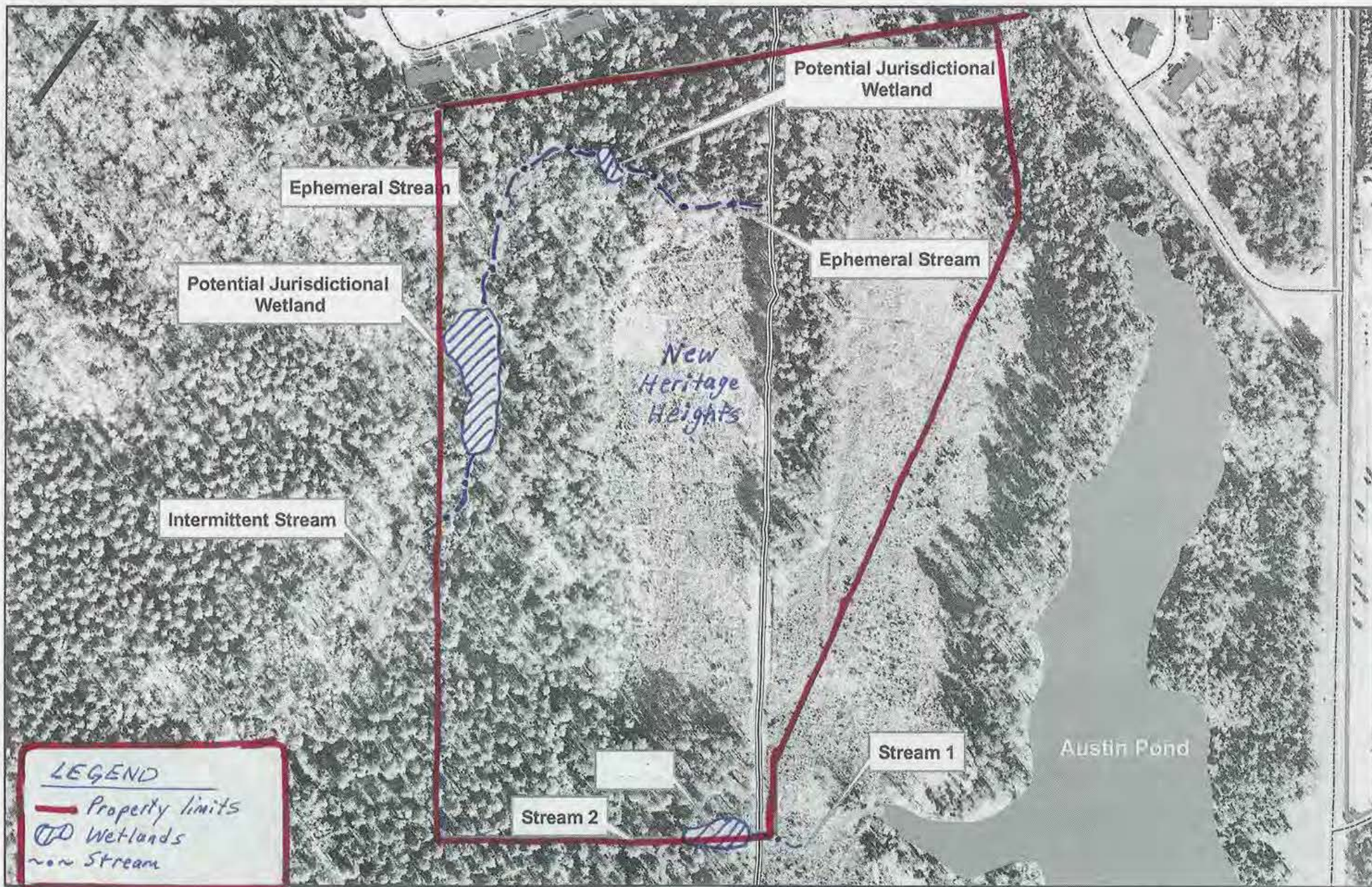


Figure 19. Streams, wetlands, and other surface waters located in the New Heritage Heights housing areas.

Source: Barksdale AFB Civil Engineering GIS Database.

600

1,200

2,400

3,600

4,800

Feet

Heritage Heights

Horse Stable  
Area

New  
Heritage  
Heights

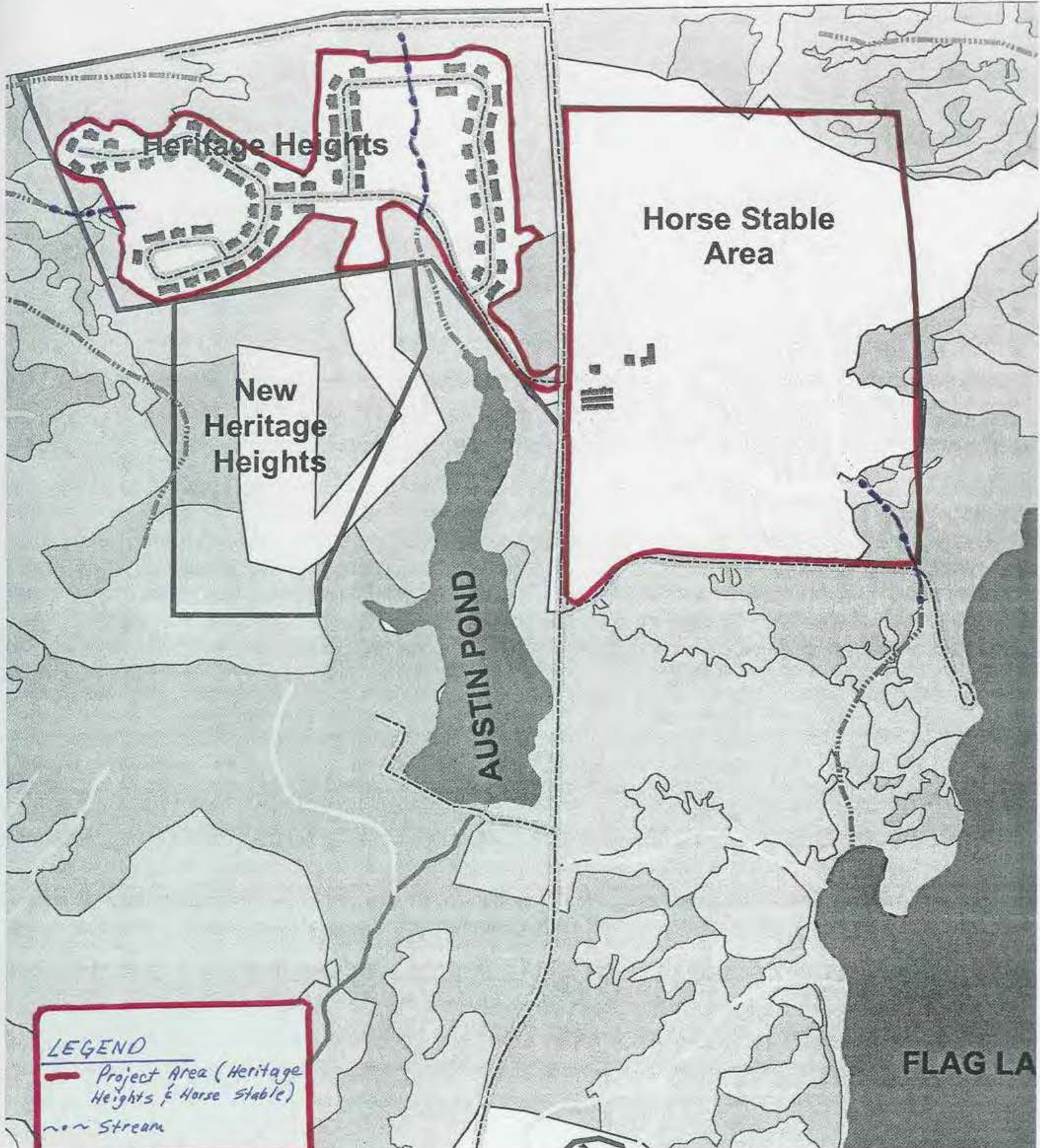
AUSTIN POND

FLAG LA

**LEGEND**

— Project Area (Heritage Heights & Horse Stable)

~ ~ ~ Stream



**JURISDICTIONAL DETERMINATION**  
U.S. Army Corps of Engineers

Revised 8/13/04

**DISTRICT OFFICE:** Vicksburg  
**FILE NUMBER:** 2004-1494 (Main Base site)

**PROJECT LOCATION INFORMATION:**

State: Louisiana  
County: Bossier  
Center coordinates of site (latitude/longitude): N 32.5025 degrees, W -93.6816 degrees  
Approximate size of area (parcel) reviewed, including uplands: acres.  
Name of nearest waterway: Macks Bayou  
Name of watershed: Red River

**JURISDICTIONAL DETERMINATION**

**Completed:** Desktop determination ☒ Date: 12/12/2005  
Site visit(s) ☒ Date(s): 11/3/2005

**Jurisdictional Determination (JD):**

- ☐ Preliminary JD - Based on available information, ☐ *there appear to be* (or) ☐ *there appear to be no* "waters of the United States" and/or "navigable waters of the United States" on the project site. A preliminary JD is not appealable (Reference 33 CFR part 331).
- ☒ Approved JD - An approved JD is an appealable action (Reference 33 CFR part 331).  
Check all that apply:
- ☐ *There are* "navigable waters of the United States" (as defined by 33 CFR part 329 and associated guidance) within the reviewed area. Approximate size of jurisdictional area: .
- ☐ *There are* "waters of the United States" (as defined by 33 CFR part 328 and associated guidance) within the reviewed area. Approximate size of jurisdictional area: acres.
- ☐ *There are* "isolated, non-navigable, intra-state waters or wetlands" within the reviewed area.  
☐ Decision supported by SWANCC/Migratory Bird Rule Information Sheet for Determination of No Jurisdiction.

**BASIS OF JURISDICTIONAL DETERMINATION:**

**A. Waters defined under 33 CFR part 329 as "navigable waters of the United States":**

- ☐ The presence of waters that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.

**B. Waters defined under 33 CFR part 328.3(a) as "waters of the United States":**

- ☐ (1) The presence of waters, which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide.
- ☐ (2) The presence of interstate waters including interstate wetlands<sup>1</sup>.
- ☐ (3) The presence of other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate commerce including any such waters (check all that apply):
- ☐ (i) which are or could be used by interstate or foreign travelers for recreational or other purposes.
- ☐ (ii) from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
- ☐ (iii) which are or could be used for industrial purposes by industries in interstate commerce.
- ☐ (4) Impoundments of waters otherwise defined as waters of the US.
- ☐ (5) The presence of a tributary to a water identified in (1) - (4) above.
- ☐ (6) The presence of territorial seas.
- ☐ (7) The presence of wetlands adjacent<sup>2</sup> to other waters of the US, except for those wetlands adjacent to other wetlands.

**Rationale for the Basis of Jurisdictional Determination (applies to any boxes checked above).** *If the jurisdictional water or wetland is not itself a navigable water of the United States, describe connection(s) to the downstream navigable waters. If B(1) or B(3) is used as the Basis of Jurisdiction, document navigability and/or interstate commerce connection (i.e., discuss site conditions, including why the waterbody is navigable and/or how the destruction of the waterbody could affect interstate or foreign commerce). If B(2, 4, 5 or 6) is used as the Basis of Jurisdiction, document the rationale used to make the determination. If B(7) is used as the Basis of Jurisdiction, document the rationale used to make adjacency determination:*

(End 2)

**Lateral Extent of Jurisdiction:** (Reference: 33 CFR parts 328 and 329)

- ☐ Ordinary High Water Mark indicated by:
- ☐ clear, natural line impressed on the bank
  - ☐ the presence of litter and debris
  - ☐ changes in the character of soil
  - ☐ destruction of terrestrial vegetation
  - ☐ shelving
  - ☐ other:
- ☐ High Tide Line indicated by:
- ☐ oil or scum line along shore objects
  - ☐ fine shell or debris deposits (foreshore)
  - ☐ physical markings/characteristics
  - ☐ tidal gages
  - ☐ other:
- ☐ Mean High Water Mark indicated by:
- ☐ survey to available datum; ☐ physical markings; ☐ vegetation lines/changes in vegetation types.
- ☐ Wetland boundaries, as shown on the attached wetland delineation map and/or in a delineation report prepared by:

**Basis For Not Asserting Jurisdiction:**

- ☒ The reviewed area consists entirely of uplands.
- ☐ Unable to confirm the presence of waters in 33 CFR part 328(a)(1, 2, or 4-7).
- ☐ Headquarters declined to approve jurisdiction on the basis of 33 CFR part 328.3(a)(3).
- ☐ The Corps has made a case-specific determination that the following waters present on the site are not Waters of the United States:
- ☐ Waste treatment systems, including treatment ponds or lagoons, pursuant to 33 CFR part 328.3.
  - ☐ Artificially irrigated areas, which would revert to upland if the irrigation ceased.
  - ☐ Artificial lakes and ponds created by excavating and/or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing.
  - ☐ Artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating and/or diking dry land to retain water for primarily aesthetic reasons.
  - ☐ Water-filled depressions created in dry land incidental to construction activity and pits excavated in dry land for the purpose of obtaining fill, sand, or gravel unless and until the construction or excavation operation is abandoned and the resulting body of water meets the definition of waters of the United States found at 33 CFR 328.3(a).
  - ☐ Isolated, intrastate wetland with no nexus to interstate commerce.
  - ☐ Prior converted cropland, as determined by the Natural Resources Conservation Service. Explain rationale:
  - ☐ Non-tidal drainage or irrigation ditches excavated on dry land. Explain rationale:
  - ☐ Other (explain):

**DATA REVIEWED FOR JURISDICTIONAL DETERMINATION (mark all that apply):**

- ☒ Maps, plans, plots or plat submitted by or on behalf of the applicant.
- ☐ Data sheets prepared/submitted by or on behalf of the applicant.
- ☐ This office concurs with the delineation report, dated \_\_\_\_\_, prepared by (company):
- ☐ This office does not concur with the delineation report, dated \_\_\_\_\_, prepared by (company):
- ☐ Data sheets prepared by the Corps.
- ☐ Corps' navigable waters' studies:
- ☐ U.S. Geological Survey Hydrologic Atlas:
- ☒ U.S. Geological Survey 7.5 Minute Topographic maps: Bossier City, LA 1:24000
- ☐ U.S. Geological Survey 7.5 Minute Historic quadrangles:
- ☐ U.S. Geological Survey 15 Minute Historic quadrangles:
- ☒ USDA Natural Resources Conservation Service Soil Survey: Bossier Parish, LA
- ☐ National wetlands inventory maps:
- ☐ State/Local wetland inventory maps:
- ☐ FEMA/FIRM maps (Map Name & Date):
- ☐ 100-year Floodplain Elevation is: \_\_\_\_\_ (NGVD)
- ☒ Aerial Photographs (Name & Date): Bossier City, LA (Digital Ortho), 1998
- ☐ Other photographs (Date):
- ☐ Advanced Identification Wetland maps:
- ☒ Site visit/determination conducted on: 11/3/2005
- ☐ Applicable/supporting case law:
- ☐ Other information (please specify):

<sup>1</sup>Wetlands are identified and delineated using the methods and criteria established in the Corps Wetland Delineation Manual (87 Manual) (i.e., occurrence of hydrophytic vegetation, hydric soils and wetland hydrology).

<sup>2</sup>The term "adjacent" means bordering, contiguous, or neighboring. Wetlands separated from other waters of the U.S. by man-made dikes or barriers, natural river berms, beach dunes, and the like are also adjacent.

**JURISDICTIONAL DETERMINATION**  
U.S. Army Corps of Engineers

Revised 8/13/04

**DISTRICT OFFICE:** Vicksburg

**FILE NUMBER:** 2004-1494 (Capehart, Heritage Heights, Horse Stable, New Heritage Heights Sites)

**PROJECT LOCATION INFORMATION:**

State: Louisiana

County: Bossier

Center coordinates of site (latitude/longitude): N 32.5132 degrees, W -93.5941 degrees; N32.5303, -93.6008  
N 32.5274 degrees, W -93.5921 degrees; N32.5263, -93.6010

Approximate size of area (parcel) reviewed, including uplands: acres.

Name of nearest waterway: Unnamed tributary to Red Chute Bayou (Heritage Heights, New Heritage Heights)

Unnamed tributary to Flag Lake (Capehart, Horse Stable)

Name of watershed: Red River

**JURISDICTIONAL DETERMINATION**

**Completed:** Desktop determination



Date: 12/12/2005

Site visit(s)



Date(s): 11/3/2005

**Jurisdictional Determination (JD):**

☐ Preliminary JD - Based on available information, ☐ *there appear to be* (or) ☐ *there appear to be no* "waters of the United States" and/or "navigable waters of the United States" on the project site. A preliminary JD is not appealable (Reference 33 CFR part 331).

☒ Approved JD - An approved JD is an appealable action (Reference 33 CFR part 331).  
Check all that apply:

☐ *There are* "navigable waters of the United States" (as defined by 33 CFR part 329 and associated guidance) within the reviewed area. Approximate size of jurisdictional area: .

☒ *There are* "waters of the United States" (as defined by 33 CFR part 328 and associated guidance) within the reviewed area. Approximate size of jurisdictional area: acres.

☐ *There are* "isolated, non-navigable, intra-state waters or wetlands" within the reviewed area.

☐ Decision supported by SWANCC/Migratory Bird Rule Information Sheet for Determination of No Jurisdiction.

**BASIS OF JURISDICTIONAL DETERMINATION:**

**A. Waters defined under 33 CFR part 329 as "navigable waters of the United States":**

☐ The presence of waters that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.

**B. Waters defined under 33 CFR part 328.3(a) as "waters of the United States":**

☐ (1) The presence of waters, which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide.

☐ (2) The presence of interstate waters including interstate wetlands<sup>1</sup>.

☐ (3) The presence of other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate commerce including any such waters (check all that apply):

☐ (i) which are or could be used by interstate or foreign travelers for recreational or other purposes.

☐ (ii) from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.

☐ (iii) which are or could be used for industrial purposes by industries in interstate commerce.

☐ (4) Impoundments of waters otherwise defined as waters of the US.

☒ (5) The presence of a tributary to a water identified in (1) - (4) above.

☐ (6) The presence of territorial seas.

☒ (7) The presence of wetlands adjacent<sup>2</sup> to other waters of the US, except for those wetlands adjacent to other wetlands.

**Rationale for the Basis of Jurisdictional Determination (applies to any boxes checked above).** *If the jurisdictional water or wetland is not itself a navigable water of the United States, describe connection(s) to the downstream navigable waters. If B(1) or B(3) is used as the Basis of Jurisdiction, document navigability and/or interstate commerce connection (i.e., discuss site conditions, including why the waterbody is navigable and/or how the destruction of the waterbody could affect interstate or foreign commerce). If B(2, 4, 5 or 6) is used as the Basis of Jurisdiction, document the rationale used to make the determination. If B(7) is used as the Basis of Jurisdiction, document the rationale used to make adjacency determination:* Wetlands are adjacent to an unnamed tributary to Red Chute Bayou, which connects to Loggy Bayou, a navigable water of the U.S., then connects to the Red River, a navigable water of the U.S. The streams are part of a tributary system that connects to Red Chute Bayou, which connects to Loggy Bayou.

(End 2a)

**Lateral Extent of Jurisdiction:** (Reference: 33 CFR parts 328 and 329)

- ☒ Ordinary High Water Mark indicated by:
- ☐ clear, natural line impressed on the bank
  - ☐ the presence of litter and debris
  - ☐ changes in the character of soil
  - ☐ destruction of terrestrial vegetation
  - ☒ shelving
  - ☐ other:
- ☐ High Tide Line indicated by:
- ☐ oil or scum line along shore objects
  - ☐ fine shell or debris deposits (foreshore)
  - ☐ physical markings/characteristics
  - ☐ tidal gages
  - ☐ other:

- ☐ Mean High Water Mark indicated by:
- ☐ survey to available datum; ☐ physical markings; ☐ vegetation lines/changes in vegetation types.

- ☒ Wetland boundaries, as shown on the attached wetland delineation map and/or in a delineation report prepared by:  
Grant McAfee/Dr. Lynn Kitchen

**Basis For Not Asserting Jurisdiction:**

- ☐ The reviewed area consists entirely of uplands.
- ☐ Unable to confirm the presence of waters in 33 CFR part 328(a)(1, 2, or 4-7).
- ☐ Headquarters declined to approve jurisdiction on the basis of 33 CFR part 328.3(a)(3).
- ☐ The Corps has made a case-specific determination that the following waters present on the site are not Waters of the United States:
- ☐ Waste treatment systems, including treatment ponds or lagoons, pursuant to 33 CFR part 328.3.
  - ☐ Artificially irrigated areas, which would revert to upland if the irrigation ceased.
  - ☐ Artificial lakes and ponds created by excavating and/or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing.
  - ☐ Artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating and/or diking dry land to retain water for primarily aesthetic reasons.
  - ☐ Water-filled depressions created in dry land incidental to construction activity and pits excavated in dry land for the purpose of obtaining fill, sand, or gravel unless and until the construction or excavation operation is abandoned and the resulting body of water meets the definition of waters of the United States found at 33 CFR 328.3(a).
  - ☐ Isolated, intrastate wetland with no nexus to interstate commerce.
  - ☐ Prior converted cropland, as determined by the Natural Resources Conservation Service. Explain rationale:
  - ☐ Non-tidal drainage or irrigation ditches excavated on dry land. Explain rationale:
  - ☐ Other (explain):

**DATA REVIEWED FOR JURISDICTIONAL DETERMINATION (mark all that apply):**

- ☒ Maps, plans, plots or plat submitted by or on behalf of the applicant.
- ☒ Data sheets prepared/submitted by or on behalf of the applicant.
- ☒ This office concurs with the delineation report, dated \_\_\_\_\_, prepared by (company): Mr. McAfee, Dr. Kitchen
- ☐ This office does not concur with the delineation report, dated \_\_\_\_\_, prepared by (company):
- ☐ Data sheets prepared by the Corps.
- ☐ Corps' navigable waters' studies:
- ☐ U.S. Geological Survey Hydrologic Atlas:
- ☒ U.S. Geological Survey 7.5 Minute Topographic maps: Eastwood, LA 1:24000
- ☐ U.S. Geological Survey 7.5 Minute Historic quadrangles:
- ☐ U.S. Geological Survey 15 Minute Historic quadrangles:
- ☒ USDA Natural Resources Conservation Service Soil Survey: Bossier Parish, LA
- ☐ National wetlands inventory maps:
- ☐ State/Local wetland inventory maps:
- ☐ FEMA/FIRM maps (Map Name & Date):
- ☐ 100-year Floodplain Elevation is: \_\_\_\_\_ (NGVD)
- ☒ Aerial Photographs (Name & Date): Eastwood, LA (Digital Ortho), 1998
- ☐ Other photographs (Date):
- ☐ Advanced Identification Wetland maps:
- ☒ Site visit/determination conducted on: 11/3/2005
- ☐ Applicable/supporting case law:
- ☐ Other information (please specify):

<sup>1</sup>Wetlands are identified and delineated using the methods and criteria established in the Corps Wetland Delineation Manual (87 Manual) (i.e., occurrence of hydrophytic vegetation, hydric soils and wetland hydrology).

<sup>2</sup>The term "adjacent" means bordering, contiguous, or neighboring. Wetlands separated from other waters of the U.S. by man-made dikes or barriers, natural river berms, beach dunes, and the like are also adjacent.

## NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: Department of the Air Force	File Number: 2004-1494	Date: December 12, 2005
Attached is:		See Section Below
<input type="checkbox"/>	INITIAL PROFFERED PERMIT (Standard Permit or Letter of Permission)	A
<input type="checkbox"/>	PROFFERED PERMIT (Standard Permit or Letter of Permission)	B
<input type="checkbox"/>	PERMIT DENIAL	C
<input checked="" type="checkbox"/>	APPROVED JURISDICTIONAL DETERMINATION	D
<input type="checkbox"/>	PRELIMINARY JURISDICTIONAL DETERMINATION	E

**SECTION I -** The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at <http://usace.army.mil/inet/functions/cw/cecwo/reg> or Corps regulations at 33 CFR Part 331.

**A: INITIAL PROFFERED PERMIT:** You may accept or object to the permit.

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations (JD) associated with the permit.
- **OBJECT:** If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

**B: PROFFERED PERMIT:** You may accept or appeal the permit.

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **APPEAL:** If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

**C: PERMIT DENIAL:** You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

**D: APPROVED JURISDICTIONAL DETERMINATION:** You may accept or appeal the approved JD or provide new information.

- **ACCEPT:** You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- **APPEAL:** If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

**E: PRELIMINARY JURISDICTIONAL DETERMINATION:** You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

(Encl 3)

## SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

### POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact:

Charles R. Allred, Jr.  
U.S. Army Corps of Engineers  
Regulatory Branch  
4155 Clay Street  
Vicksburg, MS 39183-3435  
(601) 631-5546

If you only have questions regarding the appeal process you may also contact:

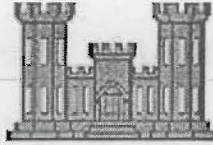
Division Engineer  
Attn: Appeals Review Officer  
Mississippi Valley Division  
Post Office Box 80  
Vicksburg, MS 39181-0080  
(601)634-5820

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

Signature of appellant or agent.

Date:

Telephone number:



# United States Army Corps of Engineers

## Regulatory Program Applicant Information

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### General Information

#### Authority for the Regulatory Program

The U.S. Army Corps of Engineers has been regulating activities in the Nation's waters since 1890. Until the 1960's the primary purpose of the Regulatory Program was to protect navigation. Since then, as a result of laws and court decisions, the Program has been broadened so that it now considers the full public interest for both the protection and utilization of water resources.

The regulatory authorities and responsibilities of the Corps of Engineers are based on the following laws:

- Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403) prohibits the obstruction or alteration of navigable waters of the United States without a permit from the Corps of Engineers.
- The Clean Water Act (33 U.S.C. 1344) Section 301 of this Act prohibits the discharge of dredged or fill material into waters of the United States without a permit from the Corps of Engineers under Section 404 of the Act.
- Section 103 of the Marine Protection, Research, and Sanctuaries Act of 1972, as amended (33 U.S.C. 1413) authorizes the Corps of Engineers to issue permits for the transportation of dredged material for the purpose of dumping it into ocean waters.

Other laws may also affect the processing of applications for Corps of Engineers' permits. Among these are the National Environmental Policy Act, the Coastal Zone Management Act, the Fish and Wildlife Coordination Act, the Endangered Species Act, the National Historic Preservation Act, the Deepwater Port Act, the Federal Power Act, the Marine Mammal Protection Act, the Wild and Scenic Rivers Act, and the National Fishing Enhancement Act of 1984.

(End 4)

## Explanation of Some Commonly Used Terms

Certain terms, which are closely associated with the Regulatory Program, are explained briefly in this section. If you need more detailed definitions, refer to the Code of Federal Regulations (33 CFR Parts 320 through 330) or contact a Corps District regulatory office.

**Activity(ies)** as used in this packet includes structures (pier, wharf, bulkhead, or jetty, etc.) and work (which includes dredging, disposal of dredged material, filling, excavation, land clearing, leveeing or other modification of a water of the United States).

**Navigable Waters of the United States** are those waters of the United States that are subject to the ebb and flow of the tide shoreward to the mean high water mark and/or are presently used, or have been used in the past or may be susceptible to use to transport interstate or foreign commerce. These are waters that are navigable in the traditional sense where permits are required for certain activities pursuant to Section 10 of the Rivers and Harbors Act. This term should not be confused with the term below, "waters of the United States."

**Waters of the United States** is a broader term than navigable waters of the United States defined above. Included are adjacent wetlands and tributaries to navigable waters of the United States and other waters where the degradation or destruction of which could affect interstate or foreign commerce. These are the waters where permits are required for the discharge of dredged or fill material pursuant to Section 404 of the Clean Water Act.

**Pre-application Consultation** is one or more meetings between Corps of Engineers' staff and an applicant and his/her agent or consultant. A pre-application consultation is usually related to applications for major activities and may involve discussion of alternatives, environmental documents, National Environmental Policy Act procedures, mitigation requirements, and development of the scope of the data required when an environmental impact statement is required.

**Public Hearings** may be held to acquire information and give the public the opportunity to present views and opinions. The Corps may hold a hearing or participate in joint public hearings with other Federal or state agencies. The Corps may specify in the public notice that a hearing will be held, and any person may request in writing during the comment period that a hearing be held. Specific reasons must be given as to the need for a hearing. The Corps' Commander may attempt to resolve the issue informally or he may set the date for a public hearing. Hearings are held at times and places that are convenient for the interested public. Very few applications involve a public hearing.

**The Public Interest Review** is the term that refers to the evaluation of a proposed activity to determine probable impacts. Expected benefits are balanced against reasonably foreseeable detriments. All relevant factors are weighed. Corps policy is to provide applicants with a timely and carefully weighed decision that reflects the public interest.

**Public Notice** is the primary method of advising interested public agencies and private parties of the proposed activity and of soliciting comments and information necessary to evaluate the probable impact on the public interest. Upon request, anyone's name will be added to the distribution list to receive public notices.

**Mitigation** is the avoidance and minimization of impacts to wetlands and other aquatic areas and providing compensation for (replacement of) the unavoidably lost aquatic functions and values. For additional information regarding mitigation requirements, see page 11.

**District Engineer** is the Commanding Officer at each Corps of Engineer District. He acts as the hearing officer at public hearings and makes the final decision on the issuance or denial of Department of the Army permits.

**Water body** is a river, creek, stream, lake, pool, bay, wetland, marsh, swamp, tidal flat, ocean, or other water area.

## Frequently Asked Questions

Various questions are often asked about the Regulatory Program. These answers may help you to understand the program better.

*Q. How early should I apply for a Corps permit?*

A. Since two to four months is normally required to process a routine application involving a public notice, you should apply as early as possible to be sure you have all required approvals before your planned commencement date. For a large or complex activity that may take longer, it is often helpful to have a "pre-application consultation" or informal meeting with the Corps during the early planning phase of your project. You may receive helpful information at this point that could prevent delays later. When in doubt as to whether a permit may be required or what you need to do, please do not hesitate to call a Corps District regulatory office.

*Q. I have obtained permits from local and state governments. Do I still need an individual permit from the Corps of Engineers?*

A. It is possible you may not have to obtain an individual permit, depending on the type or location of work. The Corps has many general permits that authorize minor activities without the need for extensive individual processing. Check with your Corps District Regulatory office for information on general permits. When a general permit does not apply, you may still be required to obtain an individual permit.

*Q. What will happen if I do work without getting a permit from the Corps?*

A. Performing unauthorized work in waters of the United States or failure to comply with the terms of a valid permit can have serious consequences. You would be in violation of Federal law and could face stiff penalties, including fines and/or requirements to restore the area.

Enforcement is an important part of the Corps Regulatory Program. Corps surveillance and monitoring activities are often aided by various agencies, groups, and individuals, who report suspected violations. When in doubt as to whether a planned activity needs a permit, contact the nearest District regulatory office.

*Q. How can I obtain further information about permit requirements?*

A. Information about the Regulatory Program is available from any Corps of Engineers District regulatory office. Information may also be obtained from the water resource agency in your state.

*Q. Are most permits denied?*

A. Nationwide, only three percent of all requests for permits are denied. Those few applicants who have been denied permits usually have refused to change the design, timing, or location of the proposed activity. When a permit is denied, an applicant may redesign the project and submit a new application. To avoid unnecessary delays, pre-application consultations, particularly for applications for major activities, are recommended. The Corps will give you helpful information, including factors that will be considered during the public interest review and alternatives to consider that may prove to be useful in designing a project.

*Q. What is a wetland and what is its value?*

A. Wetlands are areas that are periodically or permanently inundated by surface or ground water and support vegetation adapted for life in saturated soil. Wetlands include swamps, marshes, bogs and similar areas. A significant natural resource, wetlands serve important functions relating to fish and wildlife, food chain production, habitat, nesting, spawning, rearing and resting sites for aquatic and land species, protection of other areas from wave action and erosion, storage areas for storm and flood waters, natural recharge areas where ground and surface water are interconnected, and natural water filtration and purification functions.

Although individual alterations of wetlands may constitute a minor change, the cumulative effect of numerous changes often results in major damage to wetland resources. The review of applications for alteration or destruction of wetlands will include consideration of whether the proposed activity can be located outside the aquatic environment.

*Q. Can I design my project to eliminate the need for a Corps permit?*

A. If your activity is located in an area of tidal waters, the best way to avoid the need for a permit is to select a site that is above the high tide line and avoids wetlands or other water bodies. In the vicinity of fresh water, stay above ordinary high water and avoid wetlands adjacent to the stream or lake. Also, it is possible that your activity is exempt and does not need a Corps permit or that it has been authorized by a nationwide or regional general permit. So, before you build, land clear, dredge or fill in a water of the United States, contact the Corps District regulatory office in your area for specific information about location, exemptions, and regional and nationwide general permits.

# The Permit Application

## General

The application form used to apply for a permit is Engineer Form 4345, *Application for Department of the Army Permit*. One is included in this package for your use. You can also obtain the application from one of the Corps of Engineers District regulatory offices. Some Corps Districts may use a slightly modified form for joint processing with a state agency; however, the required information is basically the same. It is important that you provide the complete information in the requested format. This information will be used to determine the appropriate form of authorization and to evaluate your proposal.

Some types of work have been previously authorized by nationwide or regional permits, and no further Corps approvals are required. Others may qualify for abbreviated permit processing, with authorizations in the form of letters of permission in which a permit decision can usually be reached in less than 30 days. For other activities, a public notice may be required to notify Federal, state, and local agencies, adjacent property owners, and the general public of the proposal to allow an opportunity for review and comment or to request a public hearing. Most applications involving public notices are completed within four months and many are completed within 60 days.

The Corps will begin to process your application immediately upon receipt of all required information. You will be sent an acknowledgement of its receipt and the application number assigned to your file. You should refer to this number when inquiring about your application. Your proposal will be reviewed, balancing the need and expected benefits against the probable impacts of the work, taking into consideration all comments received and other relevant factors. This process is called the public interest review. The Corps' goal is to reach a decision regarding permit issuance or denial within 60 days of receipt of a complete application. However, some complex activities, issues, or requirements of law may prevent the Corps from meeting this goal on a particular application.

For any specific information on the evaluation process, filling out the application forms, or the status of your application, you should contact the regulatory branch of the Corps of Engineers District office that has jurisdiction over the area where you plan to do the work.

## Typical Processing Procedure for a Standard Individual Permit

1. Pre-application consultation (optional).
2. Applicant submits ENG Form 4345 to District regulatory office.\*
3. Corps receives application and assigns identification number.
4. Public notice is issued (within 15 days of receiving all information).
5. 15-30 day comment period, depending upon nature of activity.

6. Proposal is reviewed by the Corps\*\* as well as the following:

- a. Public
- b. Special interest groups
- c. Local agencies
- d. State agencies
- e. Federal agencies

7. The Corps considers all comments.

8. Other Federal agencies are consulted, if appropriate.

9. The Corps may ask applicant to provide additional information.

10. Public hearing is held, if needed.

11. The Corps makes decision.

12. Permit is issued or,

13. Permit is denied and applicant advised of reason.

\* A local variation, often a joint Federal-State application form may be submitted.

\*\* Review period may be extended if applicant fails to submit information, or if due to requirements of certain regulations.

## Evaluation Factors

The decision whether to grant or deny a permit is based on a public interest review of the probable impact of the proposed activity and its intended use. Benefits and detriments are balanced by considering effects on items such as:

conservation  
economics  
aesthetics  
general environmental concerns  
wetlands  
cultural values  
flood hazards  
floodplain values  
food and fiber production

navigation  
shore erosion and accretion  
recreation  
water supply and conservation  
water quality  
energy needs  
safety  
needs and welfare of the people  
considerations of private ownership

The following **general criteria** will be considered in the evaluation of every application:

- the relative extent of the public and private need for the proposed activity;
- the practicability of using reasonable alternative locations and methods to accomplish the objective of the proposed activity; and
- the extent and permanence of the beneficial and/or detrimental effects that the proposed activity is likely to have on the public and private uses to which the area is suited.

### **Section 404(b)(1) of the Clean Water Act:**

If your project involves the discharge (placement) of dredged or fill material, it will also be necessary for the Corps to evaluate your proposed activity under the Section 404(b)(1) guidelines prepared by the Environmental Protection Agency in consultation with the Corps. The guidelines restrict discharges into aquatic areas where less environmentally damaging, practicable alternatives exist.

## **Types of Permits**

### **Individual Permits (Standard Permits)**

A standard permit is one processed through the typical review procedures, which include public notice, opportunity for a public hearing, and receipt of comments. A final decision is made following a case-by-case evaluation of a specific activity.

### **Letters of Permission**

If work is minor or routine with minimum impacts and objections are unlikely, then it may qualify for a Letter of Permission (LOP). An LOP can be issued much quicker than a standard permit since an individual public notice is not required. The District Engineer will notify you if your proposed activity qualifies for an LOP.

### **General Permits**

In many cases the formal processing of a permit application is not required because of general permits already issued to the public at large by the Corps of Engineers. These are issued on a regional and nationwide basis. Separate applications may not be required for activities authorized by a general permit; nevertheless, reporting may be required. For specific information on general permits, contact the Corps District regulatory office having jurisdiction over the area of the proposed work.

## Fees

Fees are required for individual (standard) permits. \$10.00 will be charged for a permit for a non-commercial activity; \$100.00 will be charged for a permit for a commercial or industrial activity. The Corps will make the final decision as to the amount of the fee. ***Do not send a fee when you submit an application.*** When the Corps issues the permit, you will be notified and asked to submit the required fee payable to the Treasurer of the United States. No fees are charged for transferring a permit from one property owner to another, for Letters of Permission, for activities authorized by a general permit, or for permits to governmental agencies.

## Drawings

### General Information

Three types of drawings, Vicinity, Plan, and Elevation, are required to accurately depict activities. Some examples are attached for your information.

Submit one original, or good quality copy of all drawings on 8-1/2 x 11-inch white paper. Tracing paper or film may be used. Submit the fewest number of sheets necessary to adequately show the proposed activity. Drawings should be prepared in accordance with the general format of the samples, using block style lettering. Each page should have a title block. Drawings do not have to be prepared by an engineer, but professional assistance may become necessary if the project is large or complex. Leave a 1-inch margin at the top edge of each sheet for purposes of reproduction and binding.

In the title block of each sheet of drawings, identify the proposed activity and include the name of the body of water, river mile (if applicable), name of county and state, name of applicant, number of the sheet, total number of sheets in set, and date the drawing was prepared.

Since drawings must be reproduced, use heavy dark lines. Color shading cannot be used; however, dot shading, hatching, or similar graphic symbols may be used to clarify line drawings.

### Vicinity Map

The vicinity map that you provide will be printed in any public notice that is issued and used by the Corps of Engineers and other reviewing agencies to locate the site of the proposed activity. You may use an existing road map or U.S. Geological Survey topographic (scale 1: 24,000) as the vicinity map. Please include sufficient details to simplify locating the site from both the water body and from land. Identify the source of the map or chart from which the vicinity map was taken and, if not already shown, add the following:

- Location of activity site (draw an arrow showing the exact location of the site on the map).
- Latitude, longitude, river mile (if known), and other information that coincides with Block 16 on the application form.

- Name of water body and the name of the larger creek, river, bayou, etc., to which the water body is an immediate tributary.
- Name, description and location of landmarks.
- Name of all applicable political (County, Parish, Borough, Town, City, etc.) jurisdictions.
- Name of and distance to nearest town, community, or other identifying locations.
- Names or numbers of all roads in the vicinity of the site.
- North arrow.
- Scale.

## Plan View

The Plan View shows the proposed activity as if you were looking straight down on it from above. Your plan view should clearly show the following:

- Name of water body (river, creek, lake, wetland, etc.) and river mile (if known) at location of activity.
- Existing shorelines.
- Mean high and mean low water lines and maximum (spring) high tide line in tidal areas.
- Ordinary high water line and ordinary low water line, if the proposed activity is located on a non-tidal water body.
- Average water depths around the activity.
- Dimensions of the activity and distance it extends from the high water line into the water.
- Distances to nearby Federal projects, if applicable.
- Distance between proposed activity and navigation channel, where applicable.
- Location of any structures in navigable waters immediately adjacent to the proposed activity.
- Location of any wetlands (marshes, swamps, tidal flats, etc.)
- North arrow.
- Scale.

- If dredged (excavated) or fill material is involved, describe the type of material, number of cubic yards, method of handling, and the location of fill and spoil disposal area, the drawing should show proposed retention levees, weirs, and/or other means for retaining hydraulically placed materials.
- Mark the drawing to indicate previously completed portions of the activity.

## **Elevation and/or Cross Section View**

The elevation and/or cross section view is a scale drawing that shows the side, front, or rear of the proposed activity. If a section view is shown, it represents the proposed structure as it would appear if cut internally for display. Your elevation should clearly show the following:

- Water elevations as shown in the plan view.
- Water depth at waterward face of proposed activity or if dredging is proposed, dredging and estimated disposal grades.
- Dimensions from mean high water line (in tidal waters) or ordinary high water (non-tidal) of proposed fill or structure.
- Cross-section of excavation or fill, including approximate side slopes.
- Graphic or numerical scale.
- Principal dimensions of the activity.

## **Notes on Drawings\***

- Names of adjacent property owners who may be affected. Complete names and addresses should be shown in Block 24 on ENG Form 4345.
  - Legal property description: Number, name of subdivision, block, and lot number. Section, Township, and Range (if applicable) from plot, deed, or tax assessment.
  - Photographs of the site of the proposed activity are not required; however, pictures are helpful and may be submitted as part of any application.
  - While illustrations need not be professional, they should be clear, accurate, and contain all necessary information. (Illustrations for most projects are prepared by hand.)
- \* Drawings should be as clear and simple as possible (not too "busy").

# MITIGATION REQUIREMENTS FOR CORPS PERMITS

The Corps of Engineers and the U.S. Environmental Protection Agency signed a Memorandum of Agreement on February 7, 1990, which implemented the President's national goal of no-net-loss of wetlands. This memorandum sets forth the policy and procedures to be used in determining appropriate mitigation for projects that involve the permitted placement of dredged or fill material into wetlands and other waters. If a project results in identifiable losses of wetland functions and values, compensatory mitigation may be required for a project to receive approval under Section 404 of the Clean Water Act. If the mitigation plan necessary to ensure compliance with the Clean Water Act is not reasonably implementable or enforceable, the permit shall be denied.

The first step in the process is to determine if the wetlands can be avoided. The second step is to minimize adverse impacts to those wetland areas that cannot be avoided. If the Corps determines that the proposed site is the only available practicable alternative, then any remaining adverse impacts to the wetland functions and values must be mitigated to the extent appropriate and practicable in terms of cost, existing technology and logistics in light of the overall project purposes. Generally, the mitigation ratio of not less than acre for acre is required; however, the ratio (acre for acre) can be higher if the wetlands lost are of high quality. Any request for a Section 404 permit should include a statement regarding the applicant's consideration of the mitigation requirement. For more information on mitigation, please contact the Corps Regulatory office for the area where the work is planned.

## INSTRUCTIONS FOR SUBMITTING A PERMIT APPLICATION

1. Complete the attached application form (**ENG FORM 4345**). If you need assistance or wish to have a pre-application meeting, contact us at the number below.
2. Complete the attached **Certification of Legal Interest**. If the signature on the certification is other than that of the owner, the legal interest should be specified; i.e., Lessee, Trustee, Executor, etc.
3. Prepare an 8-1/2 x 11-inch drawing of the plan and elevation views of the proposed work **and** a vicinity map. (See attached examples.)
4. Mail the above information to the Regulatory Branch at the address below with a letter describing the purpose, nature, and extent of the proposed work. Also, describe the quantity and type of material involved, acreage involved, construction methods, and alternate sites you considered.

USACE, Vicksburg District  
Attention: Regulatory Branch  
4155 Clay Street  
Vicksburg, Mississippi 39183-3435  
Phone: 601-631-7071  
Fax: 601-631-5459

You may also submit your information electronically to our e-mail address:  
*regulatory@mvk02.usace.army.mil* or visit our Web site at *www.mvk.usace.army.mil* for additional information.

5. A State Water Quality Certification will be required if your proposed work involves the placement of dredged or fill material into a water of the United States (including wetlands). The responsible state agency listed below will determine whether or not your project will violate the State's water quality standards. The Corps will make your initial application for water quality certification for projects in the State of Arkansas, Louisiana, or Mississippi.

Arkansas Department of  
Environmental Quality  
Water Division  
P. O. Box 8913  
Little Rock, Arkansas 72219-8913  
Phone: 501-682-0645

Louisiana Department of  
Environmental Quality  
Office of Water Resources  
P. O. Box 82215  
Baton Rouge, Louisiana 70884-2215  
Phone: 504-765-0664

Mississippi Department of Environmental Quality  
Bureau of Pollution Control  
Post Office Box 10385  
Jackson, Mississippi 39289-0385  
Phone: 601-961-5171

6. Because of the extensive evaluation and coordination required, the permit application should be forwarded to the Vicksburg District well in advance of the proposed start of construction.

Except on very minor proposals, the permit process can be expected to take a minimum of **4-months**. Submission of accurate and complete information will minimize the amount of time required to evaluate a permit application.

7. You will be notified whether or not a fee will be required. If a Department of the Army Permit is issued, the cost is \$100 for commercial activities and \$10 for private work. Please do not send any fees with your application.

Instructions for Preparing a  
Department of the Army Permit Application

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**Blocks 1 through 4.** To be completed by Corps of Engineers.

**Block 5. Applicant's Name.** Enter the name of the responsible party or parties. If the responsible party is an agency, company, corporation, or other organization, indicate the responsible officer and title. If more than one party is associated with the application, please attach a sheet with the necessary information marked Block 5.

**Block 6. Address of Applicant.** Please provide the full address of the party or parties responsible for the application. If more space is needed, attach an extra sheet of paper marked Block 6.

**Block 7. Applicant Telephone Number(s).** Please provide the number where you can usually be reached during normal business hours.

**Blocks 8 through 11.** To be completed, if you choose to have an agent.

**Block 8. Authorized Agent's Name and Title.** Indicate name of individual or agency, designated by you, to represent you in this process. An agent can be an attorney, builder, contractor, engineer, or any other person or organization. Note: An agent is not required.

**Blocks 9 and 10. Agent's Address and Telephone Number.** Please provide the complete mailing address of the agent, along with the telephone number where he / she can be reached during normal business hours.

**Block 11. Statement of Authorization.** To be completed by applicant, if an agent is to be employed.

**Block 12. Proposed Project Name or Title.** Please provide name identifying the proposed project, *e.g.*, Landmark Plaza, Burned Hills Subdivision, or Edsall Commercial Center.

**Block 13. Name of Waterbody.** Please provide the name of any stream, lake, marsh, or other waterway to be directly impacted by the activity. If it is a minor (no name) stream, identify the waterbody the minor stream enters.

**Block 14. Proposed Project Street Address.** If the proposed project is located at a site having a street address (not a box number), please enter it here.

**Block 15. Location of Proposed Project.** Enter the county and state where the proposed project is located. If more space is required, please attach a sheet with the necessary information marked Block 15.

**Block 16. Other Location Descriptions.** If available, provide the Section, Township, and Range of the site and / or the latitude and longitude. You may also provide description of the proposed project location, such as lot numbers, tract numbers, or you may choose to locate the proposed project site from a known point (such as the right descending bank of Smith Creek, one mile downstream from the Highway 14 bridge). If a large river or stream, include the river mile of the proposed project site if known.

**Block 17. Directions to the Site.** Provide directions to the site from a known location or landmark. Include highway and street numbers as well as names. Also provide distances from known locations and any other information that would assist in locating the site.

**Block 18. Nature of Activity.** Describe the overall activity or project. Give appropriate dimensions of structures such as wingwalls, dikes (identify the materials to be used in construction, as well as the methods by which the work is to be done), or excavations (length, width, and height). Indicate whether discharge of dredged or fill material is involved. Also, identify any structure to be constructed on a fill, piles, or float-supported platforms.

The written descriptions and illustrations are an important part of the application. Please describe, in detail, what you wish to do. If more space is needed, attach an extra sheet of paper marked Block 18.

**Block 19. Proposed Project Purpose.** Describe the purpose and need for the proposed project. What will it be used for and why? Also include a brief description of any related activities to be developed as the result of the proposed project. Give the approximate dates you plan to both begin and complete all work.

**Block 20. Reasons for Discharge.** If the activity involves the discharge of dredged and/or fill material into a wetland or other waterbody, including the temporary placement of material, explain the specific purpose of the placement of the material (such as erosion control).

**Block 21. Types of Material Being Discharged and the Amount of Each Type in Cubic Yards.** Describe the material to be discharged and amount of each material to be discharged within Corps jurisdiction. Please be sure this description will agree with your illustrations. Discharge material includes: rock, sand, clay, concrete, etc.

**Block 22. Surface Areas of Wetlands or Other Waters Filled.** Describe the area to be filled at each location. Specifically identify the surface areas, or part thereof, to be filled. Also include the means by which the discharge is to be done (backhoe, dragline, etc.). If dredged material is to be discharged on an upland site, identify the site and the steps to be taken (if necessary) to prevent runoff from the dredged material back into a waterbody. If more space is needed, attach an extra sheet of paper marked Block 22.

**Block 23. Is Any Portion of the Work Already Complete?** Provide any background on any part of the proposed project already completed. Describe the area already developed, structures completed, any dredged or fill material already discharged, the type of material, volume in cubic yards, acres filled, if a wetland or other waterbody (in acres or square feet). If the work was done under an existing Corps permit, identify the authorization, if possible.

**Block 24. Names and Addresses of Adjoining Property Owners, Lessees, etc., Whose Property Adjoins the Project Site.** List complete names and full mailing addresses of the adjacent property owners (public and private) lessees, etc., whose property adjoins the waterbody or aquatic site where the work is being proposed so that they may be notified of the proposed activity (usually by public notice). If more space is needed, attach an extra sheet of paper marked Block 24.

**Information regarding adjacent landowners is usually available through the office of the tax assessor in the county or counties where the project is to be developed.**

**Block 25. Information about Approvals or Denials by Other Agencies.** You may need the approval of other federal, state, or local agencies for your project. Identify any applications you have submitted and the status, if any (approved or denied) of each application. You need not have obtained all other permits before applying for a Corps permit.

**Block 26. Signature of Applicant or Agent.** The application must be signed by the owner or other authorized party (agent). This signature shall be an affirmation that the party applying for the permit possesses the requisite property rights to undertake the activity applied for (including compliance with special conditions, mitigation, etc.).

## DRAWINGS AND ILLUSTRATIONS

### General Information.

Three types of illustrations are needed to properly depict the work to be undertaken. These illustrations or drawings are identified as a Vicinity Map, a Plan View or a Typical Cross-Section Map. Identify each illustration with a figure or attachment number.

Please submit one original, or good quality copy, of all drawings on 8½ x11 inch plain white paper (tracing paper or film may be substituted). Use the fewest number of sheets necessary for your drawings or illustrations.

Each illustration should identify the project, the applicant, and the type of illustration (vicinity map, plan view, or cross-section). **While illustrations need not be professional (many small, private project illustrations are prepared by hand), they should be clear, accurate, and contain all necessary information.**



APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT  
(33 CFR 325)

OMB APPROVAL NO. 0710-0003  
Expires December 31, 2004

The public reporting burden for this collection of information is estimated to average 10 hours per response, although the majority of applications should require 5 hours or less. This includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters Service Directorate of Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302; and to the Office of Management and Budget, Paperwork Reduction Project (0710-0003), Washington, DC 20503. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. Please DO NOT RETURN your form to either of those addresses. Completed applications must be submitted to the District Engineer having jurisdiction over the location of the proposed activity.

PRIVACY ACT STATEMENT

Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies. Submission of requested information is voluntary, however, if information is not provided, the permit application cannot be processed nor can a permit be issued.

One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned.

(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)

1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETED
--------------------	----------------------	------------------	-------------------------------

(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME	8. AUTHORIZED AGENT'S NAME AND TITLE <i>(an agent is not required)</i>
6. APPLICANT'S ADDRESS	9. AGENT'S ADDRESS
7. APPLICANT'S PHONE NUMBERS WITH AREA CODE a. Residence b. Business	10. AGENT'S PHONE NUMBERS WITH AREA CODE a. Residence b. Business

11. STATEMENT OF AUTHORIZATION

I hereby authorize \_\_\_\_\_ to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.

APPLICANT'S SIGNATURE	DATE
-----------------------	------

NAME, LOCATION AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME OR TITLE <i>(see instructions)</i>	
13. NAME OF WATERBODY, IF KNOWN <i>(if applicable)</i>	14. PROJECT STREET ADDRESS <i>(if applicable)</i>
15. LOCATION OF PROJECT  COUNTY STATE	
16. OTHER LOCATION DESCRIPTIONS, IF KNOWN <i>(see instructions)</i>	
17. DIRECTIONS TO THE SITE	

---

18. Nature of Activity (Description of project, include all features)

---

19. Project Purpose (Describe the reason or purpose of the project, see instructions)

---

USE BLOCKS 20-22 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

---

20. Reason(s) for Discharge

---

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards

---

22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)

---

23. Is Any Portion of the Work Already Complete? Yes \_\_\_\_\_ No \_\_\_\_\_ IF YES, DESCRIBE THE COMPLETED WORK

---

24. Addresses of Adjoining Property Owners, Lessees, etc., Whose Property Adjoins the Waterbody (if more than can be entered here, please attach a supplemental list).

---

25. List of Other Certifications or Approvals/Denials Received from other Federal, State, or Local Agencies for Work Described in This Application

AGENCY	TYPE APPROVAL*	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED

\*Would include but is not restricted to zoning, building and flood plain permits

---

26. Application is hereby made for a permit or permits to authorize the work described in this application. I certify that the information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

---

SIGNATURE OF APPLICANT

---

DATE

---

SIGNATURE OF AGENT

---

DATE

The application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States, knowingly and willfully falsifies, conceals, or covers up any trick scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than \$10,000 or imprisoned not more than five years or both.

CERTIFICATION OF LEGAL INTEREST

This is to certify that I, the undersigned, do own or have other legal interest in the subject property and wish to have the attached permit application evaluated.

☐

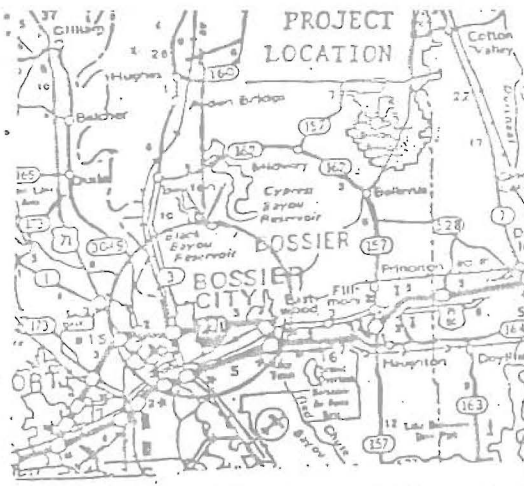
I also hereby grant permission for entry upon and inspection of the said property for permit evaluation purposes with the understanding that I can withdraw this right-of-entry only in writing and that responsible effort will be made to contact the undersigned prior to entry upon said property.

☐

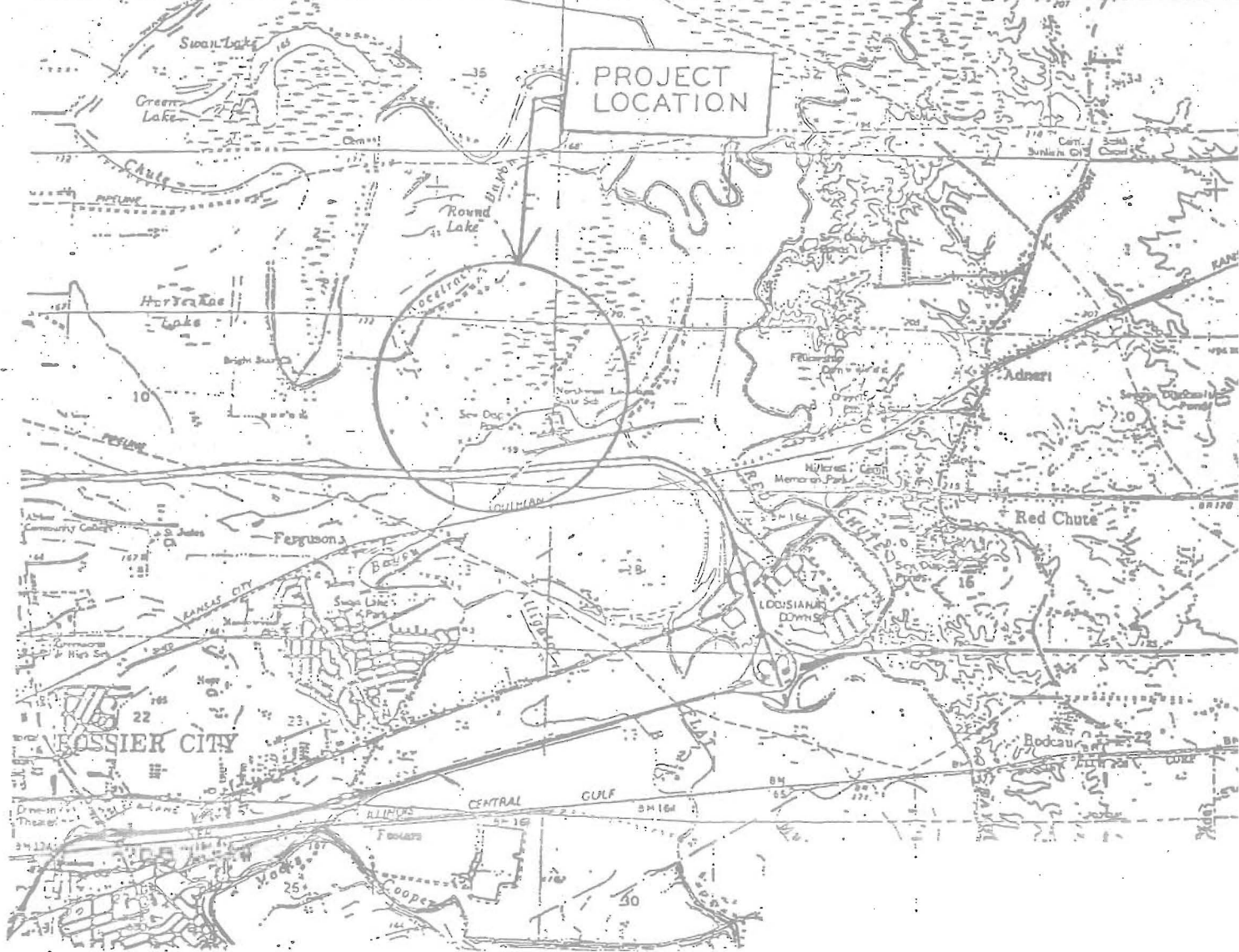
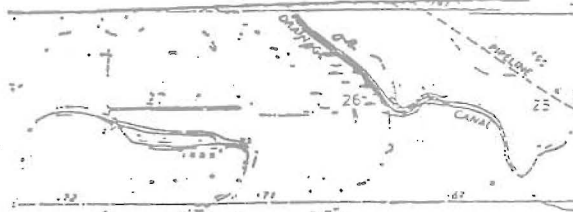
I do not grant permission for entry upon and inspection of the said property for permit evaluation purposes with the understanding that if an on-site inspection is needed, the permit process may be hampered.

Signature

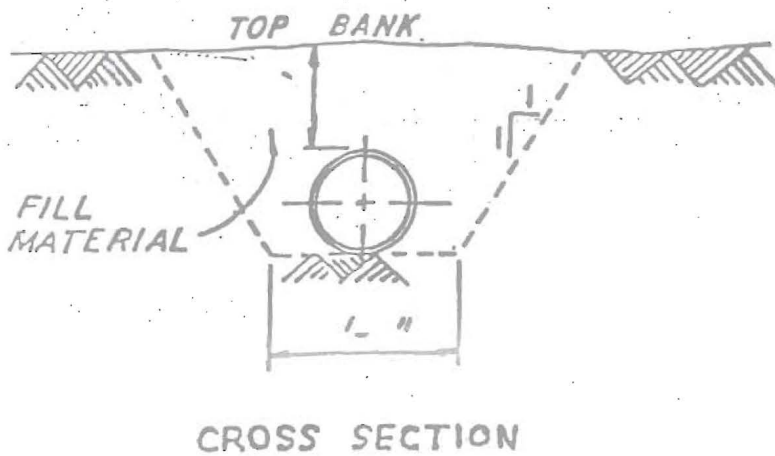
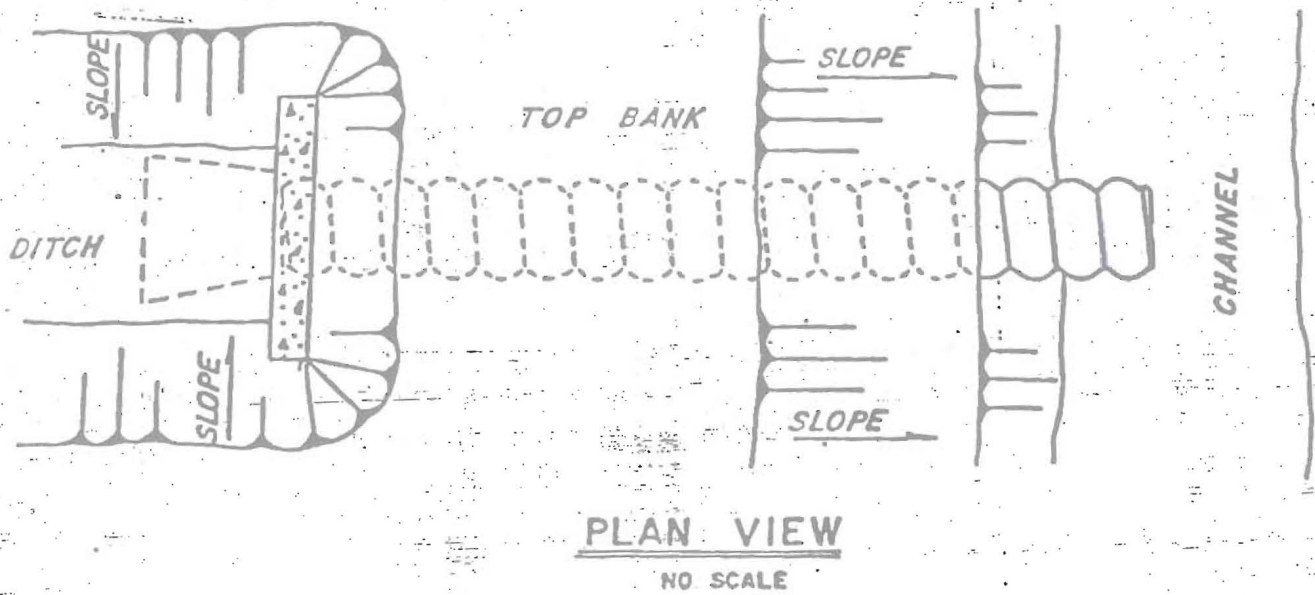
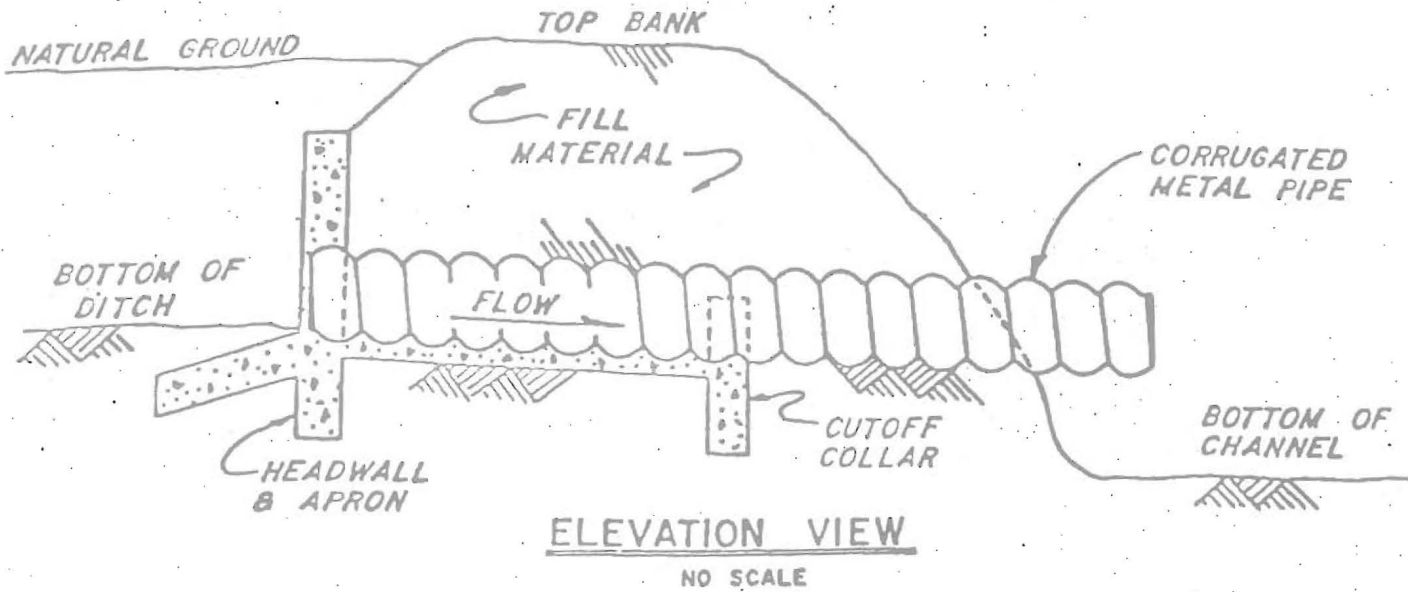
Legal Interest Title



VICINITY MAP  
SCALE OF MILES



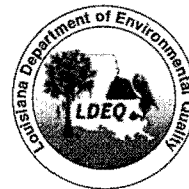
# TYPICAL OVERFALL PIPE





# State of Louisiana

## Department of Environmental Quality



KATHLEEN BABINEAUX BLANCO  
GOVERNOR

MIKE D. McDANIEL, Ph.D.  
SECRETARY

Mr. Timothy W. Walsh, Jr.  
Contractor to CES/CEP  
Department of the Air Force  
2D Civil Engineer Squadron (ACC)  
Barksdale Air Force Base, LA

Agency Interest No. 9028

RE: Response to Environmental Assessment for Housing Privatization  
Barksdale Air Force Base, Louisiana

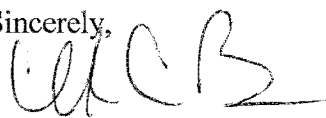
Dear Mr. Walsh:

This office received a letter from you on January 6, 2005, requesting input for issues dealing with air quality.

Your letter mentions renovation of existing structures and demolition. In light of these activities, asbestos and lead dust from such activities may be of concern. Prior to renovating or demolishing a structure, an inspection of the building by personnel accredited with the State of Louisiana must be performed. If asbestos or lead is found, there are notifications that must be completed and submitted to the department prior to renovation or demolition of the structures. Lead regulations deal with mainly with target housing, those housing children six years and under. The Asbestos regulations are more encompassing and deal with any type of structure, and whether it is being renovated or demolished. Workers and Supervisors performing renovation activities must be accredited with the State of Louisiana, Department of Environmental Quality, and Contractors must have licenses with the State Licensing Board for Contractors. Asbestos and Lead accreditation and notification forms as well as lists for accredited persons can be accessed at <http://www.deq.louisiana.gov/permits/>. More information on asbestos and lead regulations can be found in Chapters 27, 28, and 51 of the Louisiana Administrative Code, Part III of the Louisiana Air Quality Regulations. The department's air regulations may be accessed through the DEQ website at <http://www.deq.louisiana.gov/planning/regs/title33/index.htm>. Information for the State Licensing Board for Contractors can be viewed at <http://www.lslbc.state.la.us/>.

If you have any further questions, please contact Jodi G. Miller, Environmental Scientist Manager of the Air Permits Division, Manufacturing Section, at (225) 219-3004.

Sincerely,

  
Chuck Carr Brown, Ph.D.  
Assistant Secretary  
CB/JGM

Date 3/1/05



recycled paper

OFFICE OF ENVIRONMENTAL SERVICES • P.O. BOX 4313 • BATON ROUGE, LOUISIANA 70821-4313

AN EQUAL OPPORTUNITY EMPLOYER





Natural Resources Conservation Service

Ringgold Soil Survey  
P.O. Box 528  
Ringgold, LA 71068

Phone: 318-894-2174 ext. 201  
Fax: 318-894-2171

**Date:** July 26, 2005

**Subject:** Military Housing-Barksdale AFB

To: Lynn M. Kitchen  
Adams Environmental, Inc.  
12018 Las Nubes  
San Antonio, TX, 78233

Dear Mr. Kitchen:

Enclosed is 2 completed AD 1006's, Farmland Conversion Impact Rating forms for the Military Housing Project on Barksdale AFB. The reason there are two completed forms is because the two new construction sites are designated as 2 separate segments. The forms provide 4 listings A, B, C, and D but these are for alternative sites for one individual segment. The area within the New Heritage Heights segment will impact Prime and Unique Farmland and also will impact State and Local Important Farmland.

Listed below are soil map units in each segment and their ranking in regards to prime farmland and/or state and local important or non prime farmland:

New Heritage Heights Segment:

Go-Gore silt loam, 1 to 5 percent slopes—state and local importance  
Ko-Kolin silt loam, 1 to 5 percent slopes—prime farmland  
GR-Gore silt loam, 5 to 12 percent slopes—non prime farmland  
SM-Smithdale fine sandy loam, 8 to 12 percent slopes—non prime farmland

Horse Stable Area Segment:

Go-Gore silt loam, 1 to 5 percent slopes—state and local importance  
Ma-Malbis fine sandy loam, 1 to 5 percent slopes—prime farmland  
GR-Gore silt loam, 5 to 12 percent slopes—non prime farmland  
GY-Guyton silt loam, frequently flooded—non prime farmland

The AD 1006 forms reflect the acres of prime and state and local important farmland that will be impacted and the required calculations.

Should you require further information or explanation regarding this project or any other project please feel free to contact me.

A handwritten signature in cursive script that reads "Marc J. Bordelon".

Marc J. Bordelon  
Soil Scientist/Party Leader  
Ringgold Soil Survey

cc: Rick Adams, District Conservationist, Benton Field Office

## U.S. Department of Agriculture

## FARMLAND CONVERSION IMPACT RATING

<b>PART I (To be completed by Federal Agency)</b>		Date Of Land Evaluation Request 3/23/05			
Name Of Project Military Housing Privatization EA (Barksdale AFB)		Federal Agency Involved Department of Defense			
Proposed Land Use Military Housing- Horse Stable		County And State Bossier Parish, Louisiana			
<b>PART II (To be completed by NRCS)</b>		Date Request Received By NRCS			
Does the site contain prime, unique, statewide or local important farmland? (If no, the FPPA does not apply -- do not complete additional parts of this form).		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Acres Irrigated	Average Farm Size
					303
Major Crop(s) Cotton, Corn, Soybeans, Wheat	Farmable Land In Govt. Jurisdiction Acres: 366,877 % 67	Amount Of Farmland As Defined In FPPA Acres: 363,157 % 66		Date Land Evaluation Returned By NRCS 7/25/05	
Name Of Land Evaluation System Used Bossier Parish LESA	Name Of Local Site Assessment System NONE				
<b>PART III (To be completed by Federal Agency)</b>		Alternative Site Rating			
		Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly		105.0			
B. Total Acres To Be Converted Indirectly		0.0			
C. Total Acres In Site		105.0	0.0	0.0	0.0
<b>PART IV (To be completed by NRCS) Land Evaluation Information</b>					
A. Total Acres Prime And Unique Farmland		0.36			
B. Total Acres Statewide And Local Important Farmland		63.32			
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted		0.017			
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value		92%			
<b>PART V (To be completed by NRCS) Land Evaluation Criterion</b>					
Relative Value Of Farmland To Be Converted (Scale of 0 to 100 Points)		44	0	0	0
<b>PART VI (To be completed by Federal Agency)</b>					
Site Assessment Criteria (These criteria are explained in 7 CFR 658.5(b))	Maximum Points				
1. Area In Nonurban Use	15	11			
2. Perimeter In Nonurban Use	10	8			
3. Percent Of Site Being Farmed	20	20			
4. Protection Provided By State And Local Government	20	0			
5. Distance From Urban Builtup Area	15	10			
6. Distance To Urban Support Services	15	0			
7. Size Of Present Farm Unit Compared To Average	10	5			
8. Creation Of Nonfarmable Farmland	10	0			
9. Availability Of Farm Support Services	5	5			
10. On-Farm Investments	20	1			
11. Effects Of Conversion On Farm Support Services	10	0			
12. Compatibility With Existing Agricultural Use	10	0			
TOTAL SITE ASSESSMENT POINTS	160	60	0	0	0
<b>PART VII (To be completed by Federal Agency)</b>					
Relative Value Of Farmland (From Part V)	100	0	0	0	0
Total Site Assessment (From Part VI above or a local site assessment)	160	60	0	0	0
TOTAL POINTS (Total of above 2 lines)	260	60	0	0	0
Site Selected:	Date Of Selection	Was A Local Site Assessment Used? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			
Reason For Selection:					

Site A: Horse Stable Area

## U.S. Department of Agriculture

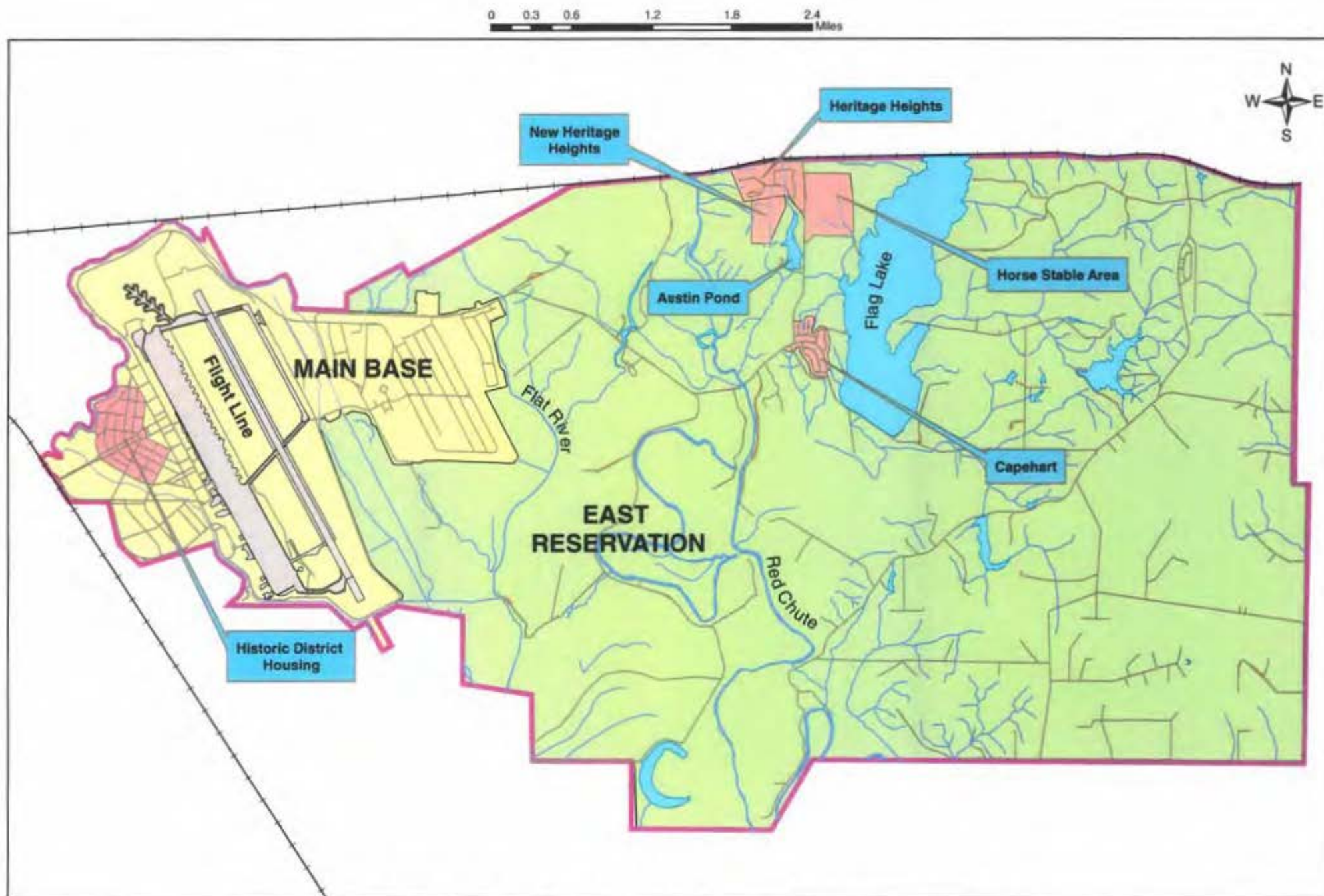
## FARMLAND CONVERSION IMPACT RATING

<b>PART I (To be completed by Federal Agency)</b>		Date Of Land Evaluation Request 3/23/05			
Name Of Project Military Housing Privatization EA (Barksdale AFB)		Federal Agency Involved Department of Defense			
Proposed Land Use Military Housing- <i>New Heritage Heights</i>		County And State Bossier Parish, Louisiana			
<b>PART II (To be completed by NRCS)</b>		Date Request Received By NRCS			
Does the site contain prime, unique, statewide or local important farmland? (If no, the FPPA does not apply - do not complete additional parts of this form)		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Acres Irrigated	Average Farm Size
				-	303
Major Crop(s)	Farmable Land In Govt. Jurisdiction	Amount Of Farmland As Defined In FPPA			
<i>Cotton, Corn, Soybeans, Wheat</i>	Acres: <i>366,877</i> % <i>67</i>	Acres: <i>363,157</i> % <i>66</i>			
Name Of Land Evaluation System Used	Name Of Local Site Assessment System	Date Land Evaluation Returned By NRCS			
<i>Bossier Parish LESA</i>	<i>NONE</i>	<i>7/25/05</i>			
<b>PART III (To be completed by Federal Agency)</b>		Alternative Site Rating			
		Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly		44.0	105.0		
B. Total Acres To Be Converted Indirectly		0.0	0.0		
C. Total Acres In Site		44.0	105.0	0.0	0.0
<b>PART IV (To be completed by NRCS) Land Evaluation Information</b>					
A. Total Acres Prime And Unique Farmland		<i>26.24</i>			
B. Total Acres Statewide And Local Important Farmland		<i>0.45</i>			
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted		<i>0.0073</i>			
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value		<i>47.30</i>			
<b>PART V (To be completed by NRCS) Land Evaluation Criterion</b>					
Relative Value Of Farmland To Be Converted (Scale of 0 to 100 Points)		<i>68</i>	0	0	0
<b>PART VI (To be completed by Federal Agency)</b>					
Site Assessment Criteria (These criteria are explained in 7 CFR 658.5(b))		Maximum Points			
1. Area In Nonurban Use	15	11	11		
2. Perimeter In Nonurban Use	10	8	8		
3. Percent Of Site Being Farmed	20	20	20		
4. Protection Provided By State And Local Government	20	0	0		
5. Distance From Urban Builtup Area	15	10	10		
6. Distance To Urban Support Services	15	0	0		
7. Size Of Present Farm Unit Compared To Average	10	10	5		
8. Creation Of Nonfarmable Farmland	10	0	0		
9. Availability Of Farm Support Services	5	5	5		
10. On-Farm Investments	20	1	1		
11. Effects Of Conversion On Farm Support Services	10	0	0		
12. Compatibility With Existing Agricultural Use	10	0	0		
TOTAL SITE ASSESSMENT POINTS	160	65	60	0	0
<b>PART VII (To be completed by Federal Agency)</b>					
Relative Value Of Farmland (From Part V)		100	0	0	0
Total Site Assessment (From Part VI above or a local site assessment)		160	65	60	0
TOTAL POINTS (Total of above 2 lines)		260	65	60	0
Site Selected:		Date Of Selection		Was A Local Site Assessment Used?	
				Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Reason For Selection:					
Site A: New Heritage Heights. Site B: Horse Stables Area					



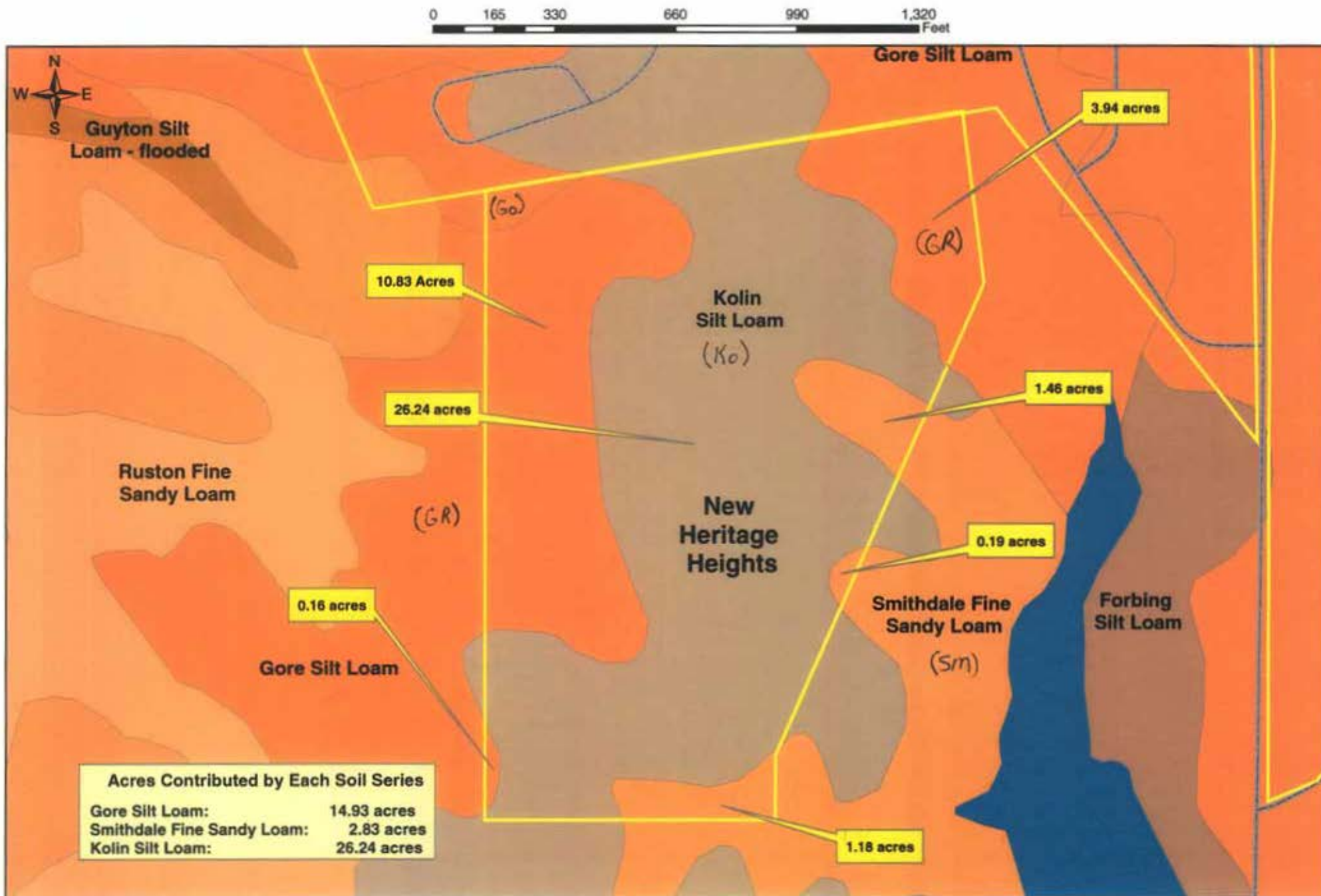
**USGS topographic map showing the general location of the project area.**

*Source: USGS 1:250,000 topographic map, Shreveport, LA quad)*



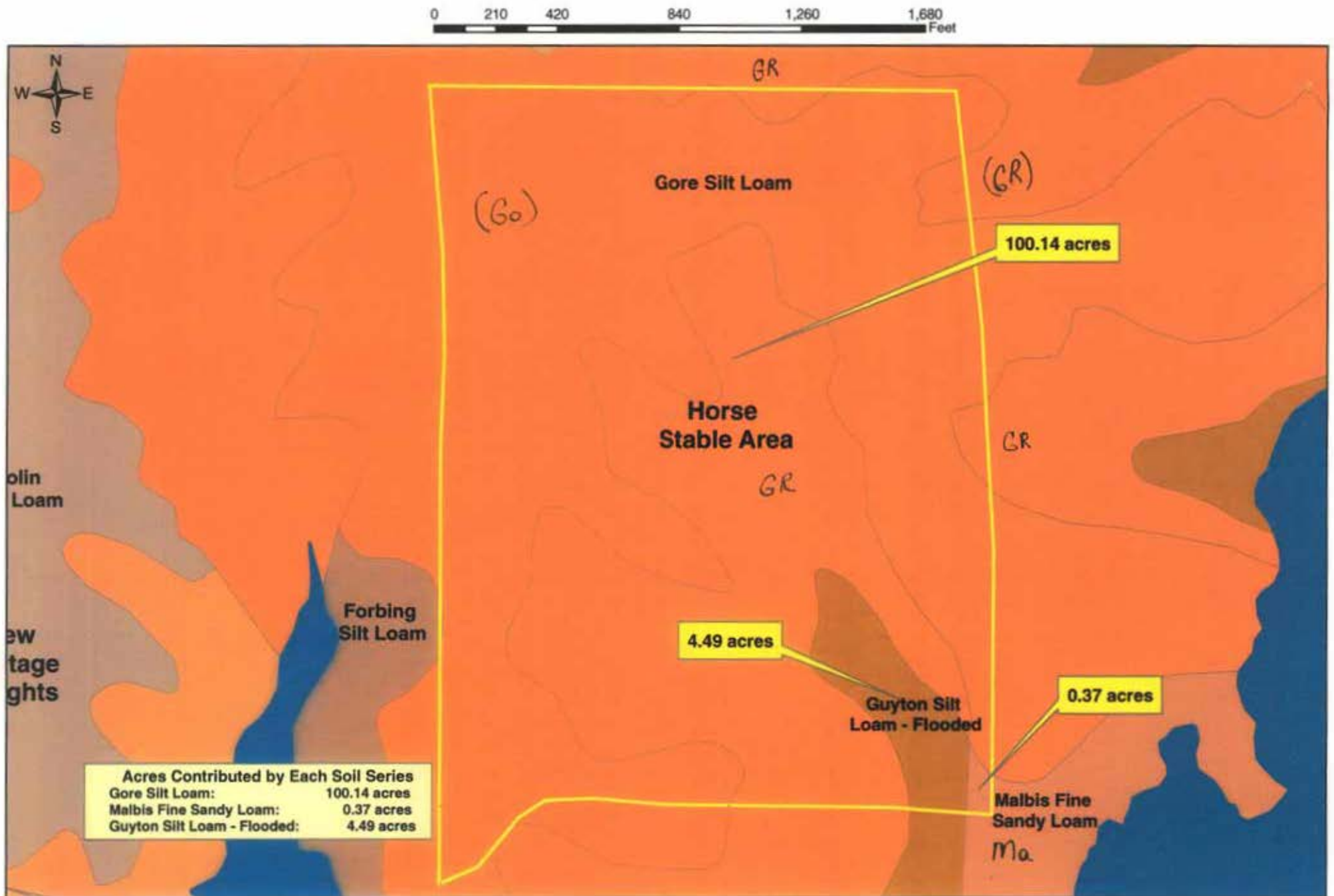
**Map of Barksdale Main Base and East Reservation showing the location of the five housing areas to be privatized.**

Source: Barksdale AFB Civil Engineering GIS Database

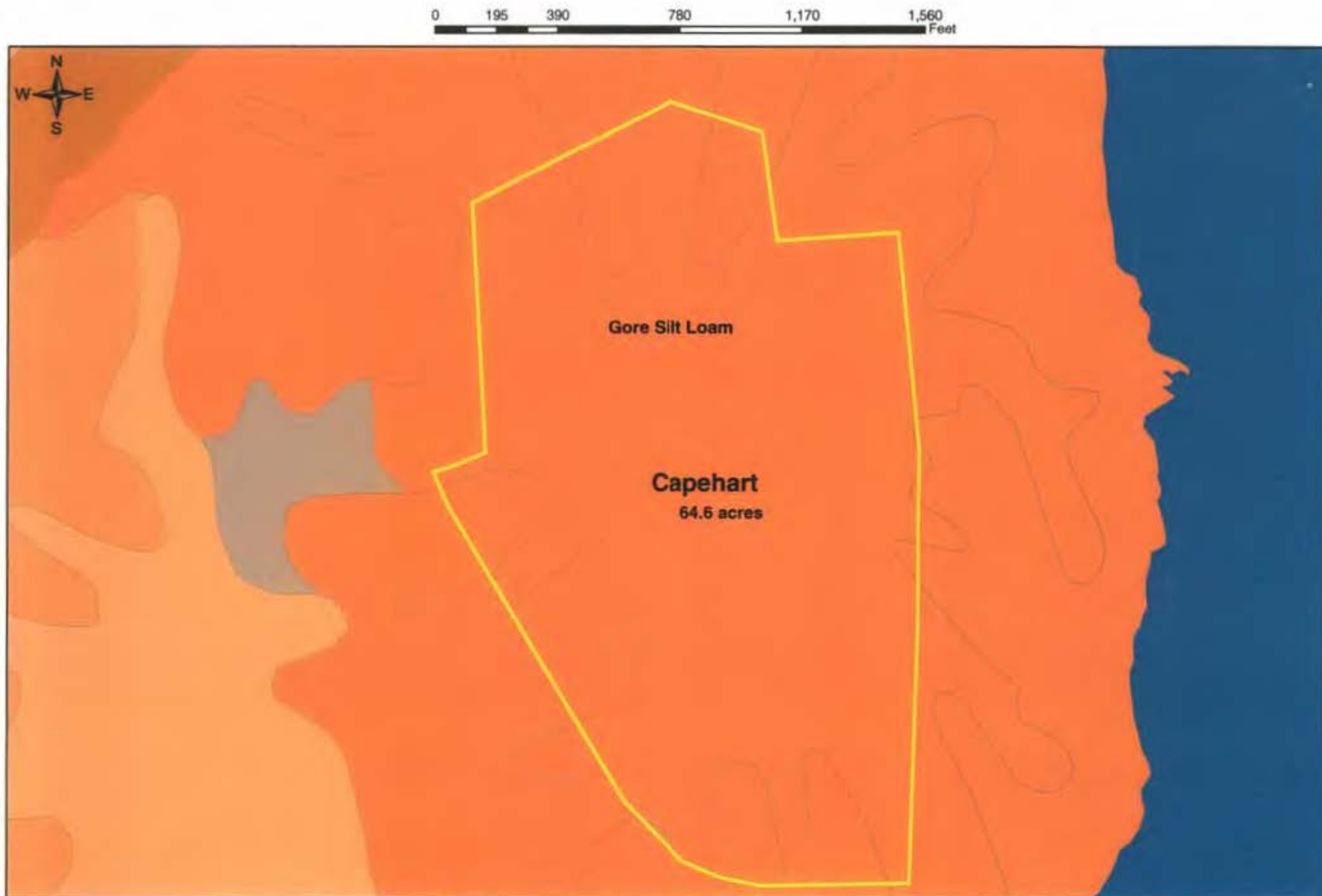


**Soil Mapping Units found on the New Heritage Heights residential housing area.**

Source: Barksdale AFB Civil Engineering GIS Database.



Source: Barksdale AFB Civil Engineering GIS Database.



**Soil Mapping Units found on the Capehart residential housing area.  
Note that this area will be returned to undeveloped soils.**

*Source: Barksdale AFB Civil Engineering GIS Database.*

## EXPLANATION FOR SITE ASSESSMENT CRITERIA, PART VI NEW HERITAGE HEIGHTS

CRITERIA	SCORE	EXPLANATION
1. Area in non-urban use	11	Heritage Heights is the only truly urban setting in the area and is located to the north of the project area and comprises about 30% of the surrounding area.
2. Perimeter in non-urban use	8	77% of the project site perimeter lies adjacent to non-urban land use.
3. Percent being farmed	20	The entire site has recently been clearcut for forest products
4. Protection provided by state and local government.	0	The site is not protected
5. Distance from urban buildup area	10	Less than 2 miles
6. Distance to urban support services	0	All services are within 0.5 miles of the site.
7. Presence of current farm unit compared to average.	10	If we consider the forest areas of the base as a farm unit, it is larger than outside areas.
8. Creation of non-farmable farmland,	0	The precence of the project will not change agricultural land use.
9. Availability of farm support services	5	All of the services are within reasonable distance.
10. On-farm investments	1	No significant investments have been made to improve the area for farming.
11. Effects of conversion on farm support service	0	No change in farm support services will result from the proeject.
12. Compatibility with existing agricultural use.	0	Proposed project is fully compatible with surrounding agricultural practices.
<b>TOTAL</b>	<b>65</b>	

# EXPLANATION FOR SITE ASSESSMENT CRITERIA, PART VI HORSE STABLES AREA

CRITERIA	SCORE	EXPLANATION
1. Area in non-urban use	11	The Horse Stables Area borders Heritage Heights which is the only truly urban setting in the area and is located to the north of the project area and comprises about 30% of the surrounding area.
2. Perimeter in non-urban use	8	81% of the project site perimeter lies adjacent to non-urban land use.
3. Percent being farmed	20	The entire site has recently been used for horse stables
4. Protection provided by state and local government.	0	The site is not protected
5. Distance from urban buildup area	10	Less than 2 miles
6. Distance to urban support services	0	All services are within 0.5 miles of the site.
7. Presence of current farm unit compared to average.	5	If we consider the forest areas of the base as a farm unit, it is smaller than outside areas.
8. Creation of non-farmable farmland.	0	The presence of the project will not change agricultural land use.
9. Availability of farm support services	5	All of the services are within reasonable distance.
10. On-farm investments	1	No significant investments have been made to improve the area for farming.
11. Effects of conversion on farm support service	0	No change in farm support services will result from the proeject.
12. Compatibility with existing agricultural use.	0	Proposed project is fully compatible with surrounding agricultural practices.
TOTAL	60	